



APPLICATION/PERMIT TO CONSTRUCT, OPERATE AND MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT-OF-WAY

Wisconsin Department of Transportation

DT1553

8/2023

Wis. Stat. §§ 66.0831, 84.01(31), 84.08, 85.15, 86.07(2)(a), 86.16, and 182.017

1. Applicant (Utility facility owner) Name and Address		2. Work Start Date	3. Work Finish Date*	6. Public Land Survey System Location (¼ section, section, town, range; provide plat map)	
		4. Is the work due to a WisDOT highway project? ☐ Yes ☐ No		7. Municipal/County Location (List all that apply) County: _____	
		5. Applicant Work Order or Project ID # (If any)			
9. Facility Type (Check all that apply) and Description (Size, material, voltage, pressure, # fibers, etc.)		12. Proposed Work Methods (Check all that apply)		8. Highway (List all that apply) WIS: _____ US: _____ Interstate: _____	
☐ Comm: _____ ☐ Electric: _____ ☐ Gas/Oil: _____ ☐ Water: _____ ☐ Sewer: _____ ☐ Casing: _____ ☐ Conduit: _____ ☐ _____: _____ ☐ Transmission ☐ Service ☐ Distribution ☐ Service (ESCP)		☐ Trench ☐ Plow ☐ Place fill ☐ Rock blasting ☐ Place cable ☐ Open cut in conduit pavement ☐ Hand/mechanical excavation Bore: ☐ Hydraulic (Auger/Jack/Tunnel) ☐ Pneumatic (Mole) ☐ Directional 1 (Manually tracked) ☐ Directional 2 (Computer tracked) ☐ Unknown (At this time)		Provide a separate location map if the plat map is not adequate.	
10. Facility Orientation (Check all that apply)		13. Work Zone Description (Check all that apply). (Provide relevant diagram(s) with application.)			
☐ Underground ☐ Overhead ☐ Crossing ☐ Parallel ☐ OSOW high clearance route ☐ Bridge attachment ☐ Scenic easement (Off right-of-way)		Install or attach to poles/towers: ☐ New ☐ Existing ☐ Guys (~Diameter) (Name of existing owner) (Provide details for all guy wires on plan sheets) Pothole (Subsurface excavation): ☐ Air ☐ Water Tree/vegetation control: ☐ Cut (Remove) ☐ Plant ☐ Trim (Prune) ☐ Mow ☐ Chemically treat		14. Is the facility near a survey monument? HMM 09-15-35 If yes, call (866) 568-2852 or email geodetic@dot.wi.gov . ☐ Yes ☐ No 15. Will appurtenances be installed with the facility? If yes, provide a description and/or specification for each item. ☐ Yes ☐ No 16. Trans 401 category? If non-minor, provide a formal erosion control plan. HMM 09-15-55 ☐ Minor ☐ Non-Minor 17. Complete the Environmental Checklist. See HMM 09-15-16 . Attachment 1. WisDOT will not review a permit application until a completed Checklist is submitted. ☐ Checklist included	
11. Work Types (Check all that apply)					
☐ New facility ☐ Remove ☐ Joint install ☐ Maintenance ☐ Improve or ☐ Discontinue, repair existing left in place					

* Includes permanent restoration. If the permitted work has not started by the "Work Finish Date," this permit is null and void. If the permitted work has started but has not been completed by the "Work Finish Date," the work shall not be completed unless authorized through an approved written time extension or a subsequent permit. **ANY PERMIT ISSUED IS REVOCABLE.**

18. Utility Person Responsible for Construction	Telephone Number	It is understood and agreed that WisDOT approval is subject to the applicant's full compliance with all pertinent statutes, as well as any regulations and rules of other jurisdictional agencies (which may be more restrictive), any supplemental permit provisions, and WisDOT's Utility Accommodation Policy , current edition.
19. Utility or Project 24/7 Emergency Contact	Telephone Number	
20. Provide company name and address of utility authorized representative if not employed by the applicant.		(Utility Authorized Representative Signature – If electronic, use brush script font or e-signature software) (Date)
21. Provide additional work details, if needed (use back page or include separate pages)		(Title) (Telephone Number) (Email Address)
		This permit does not transfer any land, or give, grant or convey any land right, right in land, or easement in WisDOT right-of-way. It is not assignable or transferrable. If the utility facility changes ownership, this permit terminates. The new owner must then obtain a permit to occupy, operate and maintain the facility in WisDOT right-of-way.

↓ Completed by Wisconsin Department of Transportation – REVIEW AFTER PERMIT ISSUANCE ↓

☐ UTILITY SHALL NOTIFY WisDOT REPRESENTATIVE LISTED BELOW 3 DAYS BEFORE STARTING ANY WORK: Region contact, office address, telephone number and email address Wisconsin DOT _____ _____ _____ _____	☐ Review All Supplemental Permit Provisions ☐ Revisions Made to Drawings or Other Pages ☐ Lane Closure System notification required ☐ Insurance or performance bond required ☐ Joint installation: See permit(s) # _____ ☐ Private utility (Non-public ownership and/or use) ☐ Expedited Service Connection Permit ☐ This permit voids & supersedes # _____ issued: _____ ☐	Application Received
		Application Completed
		Permit
		Permit
		Permit Amended
		Permit Number

(WisDOT Authorized Representative Signature – If electronic, use brush script font or e-signature software)

APPLICATION/PERMIT TO CONSTRUCT, OPERATE AND MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT-OF-WAY *(continued)*

Wisconsin Department of Transportation

DT1553

Use this section to provide information that does not fit on front page

INDEMNIFICATION

This Applicant shall save and hold the State, its officers, employees, agents, and all private and governmental contractors and subcontractors with the State under Chapter 84 Wisconsin Statutes harmless, as allowed by Wisconsin law, from actions of any nature whatsoever (including any by Applicant itself) which arise out of, or are connected with, or are claimed to arise out of or be connected with any of the work done by the Applicant, or the construction or maintenance of facilities by the Applicant, pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way, (1) while the Applicant is performing its work, or (2) while any of the Applicant's property, equipment, or personnel, are in or about such place or the vicinity thereof, or (3) while any property constructed, placed or operated by or on behalf of Applicant remains on the State's property or right-of-way pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way; including without limiting the generality of the foregoing, all liability, damages, loss expense, claims, demands and actions on account of personal injury, death or property loss to the State, its officers, employees, agents, contractors, subcontractors or frequenters; to the Applicant, its employees, agents, contractors, subcontractors, or frequenters; or to any other persons, whether based upon, or claimed to be based upon, statutory (including, without limiting the generality of the foregoing, worker's compensation), contractual, tort, or whether or not caused or claimed to have been caused by active or inactive negligence or other breach of duty by the State, its officers, employees, agents, contractors, subcontractors or frequenters; Applicant, its employees, agents, contractors, subcontractors or frequenters; or any other person.

Without limiting the generality of the foregoing, the liability, damage, loss, expense, claims, demands and actions indemnified against shall include all liability, damage, loss, expense, claims, demands and actions for damage to any property, lines or facilities placed by or on behalf of the Applicant pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way in the past or present, or that are located on any highway or State property or right-of-way with or without a permit issued by the State, for any loss of data, information, or material; for trademark, copyright or patent infringement; for unfair competition or infringement of personal or property rights of any kind whatever. The Applicant shall at its own expense investigate all such claims and demands, attend to their settlement or other disposition, defend all actions based thereon and pay all charges of attorneys and all other costs and expenses of any kind arising from any such liability, damage, loss, claims, demands and actions.

Any transfer, whether voluntary or involuntary, of ownership or control of any property constructed, placed or operated by or on behalf of the Applicant that remains on the State's property or right-of-way pursuant to this permit shall not release Applicant from any of the indemnification requirements of this permit, unless the State is notified of such transfer in writing. Any acceptance by any other person or entity, whether voluntary or involuntary, of ownership or control of any property constructed, placed or operated by or on behalf of the Applicant that remains on the State's property or right-of-way pursuant to this permit, shall include acceptance of all of the indemnification requirements of this permit by the other person or entity receiving ownership or control.



SUPPLEMENTAL PERMIT PROVISIONS

Automated License Plate Reader Cameras

PROJECT DESCRIPTION. The applicant is installing automated license plate reader (ALPR) cameras within state highway right-of-way as an aid in preventing and solving crimes. The use of the cameras is considered a communications-type utility and is allowed under WisDOT's Utility Accommodation Policy [HMM 09-15-65](#), 4.1.

1. **LEGAL USE.** Surveillance cameras shall only be used as allowed by Wisconsin statutes. For example, the use of cameras is currently *prohibited* to enforce red light running at traffic signals.
2. **REVOCATION BY WisDOT.** WisDOT may revoke this permit if its own use or sale of the right-of-way (ROW) would be facilitated by relocation of applicant's facility and shall provide applicant with written notice a minimum of one year prior to such revocation. During this period, WisDOT shall work with applicant to find a suitable replacement area on ROW near the terminated location. WisDOT shall not compensate applicant to move its facility within the ROW in keeping with WisDOT's policy on compensable and non-compensable utility facility moves. If it is necessary to maintain uninterrupted service, applicant shall be allowed to temporarily locate in WisDOT ROW at a mutually acceptable location for up to 180 days during the relocation of its facilities to the permanent site.
3. **PERMIT TERM.** This permit is valid for as long as applicant continues to own, operate and maintain its facilities within WisDOT ROW in accordance with the terms of its permit and WisDOT's [Utility Accommodation Policy](#).
4. **TERMINATION BY PERMITTEE.** The applicant may terminate this permit upon 30 days written notice to WisDOT. Upon such termination, applicant shall remove its facility from the ROW unless WisDOT notifies applicant that WisDOT will take over operation and maintenance of the facility for its own traffic operations.
5. **WORK RESTRICTIONS.** The applicant is authorized to work on weekdays between sunrise and sunset. Weekend work may be allowed upon prior approval from WisDOT. No work shall be done, and all work zone traffic control shall be removed, when the pavement is covered with ice or snow, or during winter maintenance pavement brining applications, salt spreading, or plowing operations.
6. **WORK ZONE TRAFFIC CONTROL (WZTC).** All WZTC shall be in accordance with the [Wisconsin Manual on Uniform Traffic Control Devices](#) or the [Work Zone Field Manual](#). All materials and equipment shall remain off the roadway. Traffic Control shall not encroach on the travel lane. The use of law enforcement to block a traffic lane is an acceptable use of WZTC for short-duration installations as long as it is not on an interstate, freeway or expressway.
7. **LANE CLOSURE SYSTEM NOTIFICATION.** To satisfy LCS requirements for WisDOT's [511 System](#), applicant shall notify WisDOT a minimum of **seven calendar days** prior to **any lane or shoulder closure**. applicant may use the [LCS Notification Worksheet \(HMM 09-15-60 Attachment 3\)](#) if needed and submit it to WisDOT's the [Region Utility Permit Coordinator](#) (also listed on page 1 of the dt1553) for review. WisDOT may revise the information, but applicant shall enter it into [LCS](#) unless notified by WisDOT that it will perform the entries. For **emergency** situations when any type of shoulder, lane, or road closure is required, applicant shall call WisDOT's [Traffic Management Center](#) at 800-375-7302.

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION TO WISDOT

Closure type with height, weight, or width restrictions (available width, all lanes in one direction < 16')	MINIMUM NOTIFICATION
Lane and shoulder closures	7 calendar days
Full roadway closures	7 calendar days
Ramp closures	7 calendar days
Detours	7 calendar days
Closure type without height, weight, or width restrictions (available width, all lanes in one direction ≥ 16')	MINIMUM NOTIFICATION
Shoulder closures	3 calendar days
Lane closures	3 business days
Ramp closures	3 business days
Modifying all closure types	3 business days

8. **WORK AREA PROTECTION DURING NON-WORK TIMES.** The applicant shall store its equipment and materials off the ROW during non-work times if possible. If necessary, applicant may store its equipment and materials on the ROW provided they are placed as close to the ROW line as possible and outside the clear zone. Do not park vehicles, store materials, or place signs/devices on a pedestrian facility that remains open to the public. The applicant shall ensure that any excavation left open during non-work times is well marked and secured from public intrusion.

Supplemental Provisions

9. **PEDESTRIAN ACCOMMODATIONS.** If any proposed utility work will impact a pedestrian facility, make appropriate accommodations for all pedestrians, including those who are visually impaired or must use a personal assistive mobile device (wheelchair, scooter, etc.), in accordance with the Americans with Disabilities Act (ADA) of 1990. Reference the Facilities Development Manual [11-50-31](#) for additional temporary pedestrian accommodation guidance. Use materials conforming to [Section 644](#) of WisDOT's Standard Specifications for temporary pedestrian accommodations.

Assist pedestrians and those persons in wheelchairs or other personal assistive mobility devices as needed to safely navigate the work area. The contractor shall either keep the existing path/sidewalk open, safe, and clean for pedestrians or provide alternative temporary accommodations that comply with the FDM and [SDD 15D30](#) and the [Work Zone Field Manual](#).

10. **ROW RESTORATION.** The applicant shall restore any WisDOT ROW disturbed to its original (as best as practical) condition within **two weeks** after installing its facilities. WisDOT may allow time extensions for restoration in the case of inclement weather, poor soil conditions, or if applicant's operations would track over the same disturbed areas – provided that proper erosion control devices are in place to protect the disturbed areas.

Should future maintenance work on applicant's facilities result in the disturbance of the existing ROW, applicant shall restore the ROW to its original condition as soon as possible. The basic drainage pattern of the highway shall remain undisturbed by the permitted work. Upon project completion, all spoils, debris, refuse, and waste resulting from the permitted work shall be removed from the work site.

11. **DOCUMENTATION.** Send pictures of completed installations to [DOT CO ROW Permits](#) and the [WisDOT Region Utility Permit Coordinator](#) (also listed on page 1 of the dt1553).
12. **CONSTRUCTION NOTIFICATIONS.** The applicant shall contact the [WisDOT Region Utility Permit Coordinator](#) (also listed on page 1 of the dt1553) at least three working days prior to the start of construction. applicant shall call Diggers' Hotline 800-242-8511 at least three working days prior to the start of any excavation. applicant shall provide WisDOT with the names and telephone numbers of the people in charge of its field operations. This includes people who are responsible for the overall project or separate crews and includes any contractors hired by applicant.
13. **LONGITUDINAL & VERTICAL LOCATION.** The applicant shall place its facilities as shown on the approved permit drawings. Deviations from this location may be allowed but shall first be approved by WisDOT. Revised plan sheets showing the approved deviations should be sent to WisDOT after completion. Proposed pole locations shall be a minimum of 10 ft from existing poles and signs.

The product (pole/panel/camera) labeled as the "X-squared Breakaway System" was tested and the results meet the appropriate AASHTO MASH evaluation criteria and may be located within the clear zone as approved by WisDOT.

14. **EROSION CONTROL.** A formal erosion control plan is not required if applicant can perform construction in accordance with [HMM 09-15-55](#) and [Trans 401](#). However, if any excavation remains open for more than 24 hours, then a formal erosion control plan shall be submitted to WisDOT and this provision revised accordingly. In either case, applicant shall use the appropriate erosion control best management practices (BMPs) to contain soil directly at the site to prevent disturbed soil from getting into nearby waterways and wetlands. Storm sewer and pipe underdrain inlets shall be protected with filter fabric if necessary.

All appropriate erosion control BMPs shall be in place **prior to starting construction activities**. Temporary seeding shall be used as necessary after rough grading and before project completion. applicant shall ensure that erosion control measures used to protect restored areas remain in place until replacement vegetation achieves sustained growth. Rutting due to vehicle or equipment tracks shall be smoothed out at the end of each day. applicant shall take every precaution necessary to prevent mud, dirt, or other debris from being deposited onto a travel lane or shoulder. Any materials deposited on the pavement shall be promptly removed.

15. **PERMIT AT SITE.** During the performance of work described in this permit, applicant and/or its contractor(s) or subcontractor(s) shall have a fully signed and executed copy of the permit on site, **which may in electronic format**. Failure to do so may cause a temporary shutdown of the work. Repeated offenses may cause this permit to become null and void and if so, the work shall not be completed unless authorized through a subsequent permit.

This permit is subject to the attached drawings, these supplemental provisions, and WisDOT's [Utility Accommodation Policy](#). New supplemental provisions may be added, or the existing ones deleted or amended in the future as different issues arise during the installation, operation, and maintenance of the permittee's facilities.



Lane Closure System (LCS) Notification Worksheet

Permittee will enter the data into the LCS

General Section:

1. Permit Number

2. General Description (brief description of the type of work)

3. County (Begin/End if different)

4. Highway/Direction

5. Primary Contact (WisDOT Regional Utility Permit Coordinator) – *Required*

6. Emergency Traffic Control Contractor Contact (name/number - 24 hour contact) – *Required*

7. Contractor Contact (such as contractor or utility name/number) – *Required*

8. Law Enforcement Contact (if applicable)

9. Other Contact (other WisDOT contact names if applicable)

Each Facility:

1. Facility Type (mainline, ramp, system interchange)

2. Closure/Roadway Status (Full closure, Lane/shoulder closure, Flagging operations, One lane road, One lane road temporary signal, Moving lane closure, Rolling full closure)

3. Duration (daily/nightly, weekly, continuous)

4. Begin/End Date

5. Begin/End Time

6. Begin/End Location

7. Oversize/Overweight Restrictions (height, width, weight restrictions if applicable)

8. Detour Route (if applicable)



MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
INSTALLATION

JURISDICTION:
WISCONSIN DEPARTMENT
OF TRANSPORTATION

SITE IDENTIFICATION

MOUNT PLEASANT
POLICE DEPARTMENT
8811 CAMPUS DRIVE,
MOUNT PLEASANT, WI 53406
(262) 884-0454



FLOCK SAFETY
1170 HOWELL MILL ROAD NW
SUITE 210
ATLANTA, GA 30318
PERMIT@FLOCKSAFETY.COM
415-669-0341

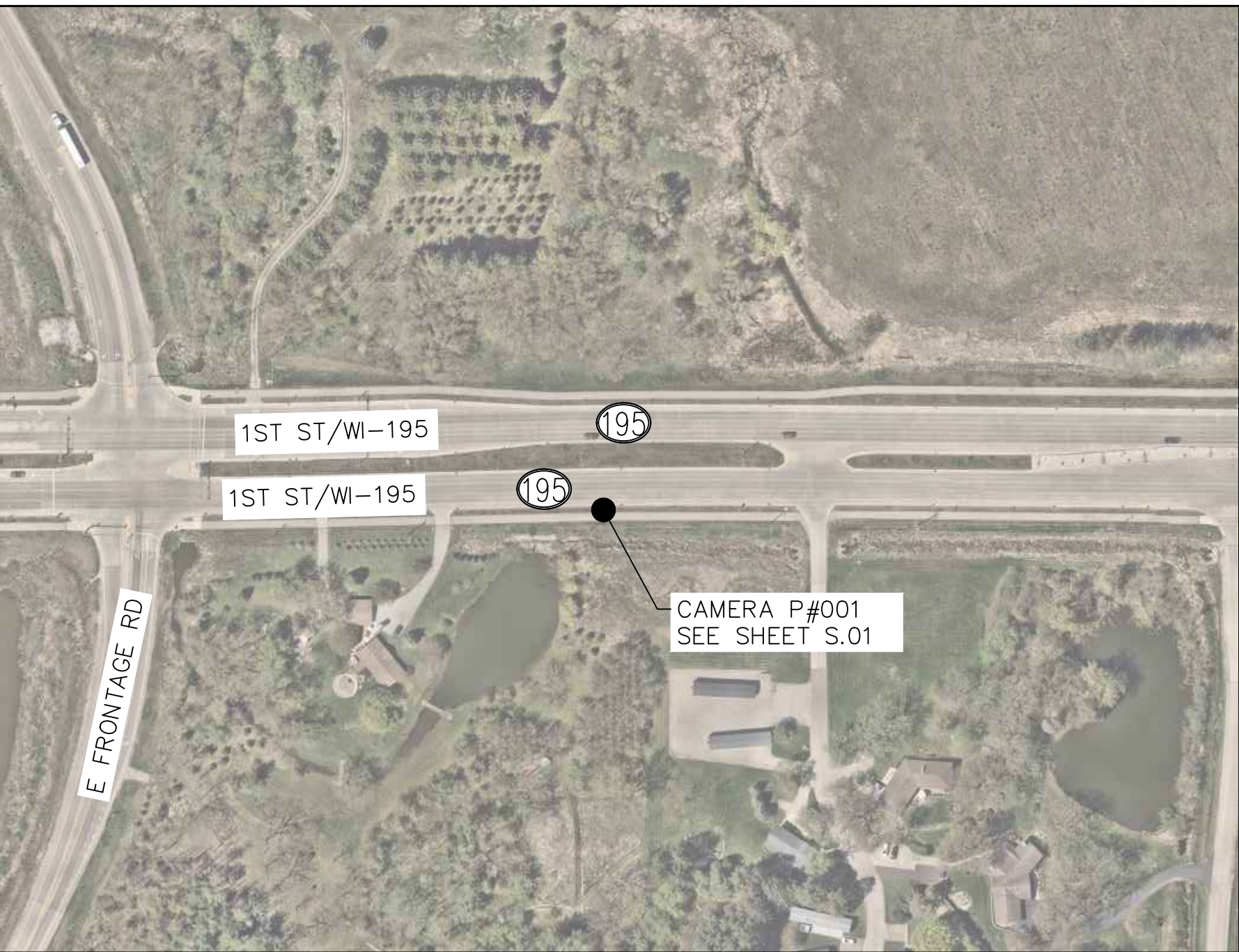


KIMLEY-HORN AND ASSOCIATES, INC.
421 FAYETTEVILLE STREET, SUITE 600
RALEIGH, NC 27601 PHONE: (984) 275-3890
ATTN.: HEATHER THAYER, P.E.

PROJECT TEAM

INSTALLATION OF NEW POLE IN EXISTING RIGHT OF WAY SUPPORTING
LICENSE PLATE READER CAMERA FOR THE MOUNT PLEASANT POLICE
DEPARTMENT.

PROJECT SUMMARY



VICINITY MAP

SHEET #	SHEET TITLE	DRAWN BY
T.01	TITLE SHEET	TLW
T.02	SYMBOLGY AND ABBREVIATIONS	TLW
S.01	SITE PLANS	TLW
D.01–D.05	EQUIPMENT AND FOUNDATION DETAILS	TLW
TC.01	TRAFFIC CONTROL PLANS	TLW

SHEET INDEX

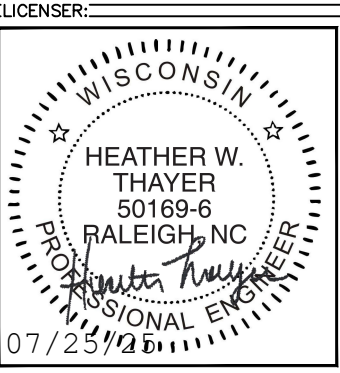


PROJECT INFORMATION:

MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
INSTALLATION

PLANS PREPARED BY:
Kimley»Horn
421 FAYETTEVILLE STREET,
SUITE 600,
RALEIGH, NC 27601
PHONE: (919) 677-2000
WWW.KIMLEY-HORN.COM

REV:	DATE:	ISSUED FOR:	BY:
8			
7			
6			
5			
4			
3			
2			
1			
0	07/16/25	PERMITTING	MRD



KHA PROJECT NUMBER:
014681002.1.100
DRAWN BY: TLW CHECKED BY: HT

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T.01

1. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND FLOCK SAFETY PROJECT SPECIFICATIONS.
2. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR ARE TO BE RESPONSIBLE FOR VERIFYING EXISTING SITE CONDITIONS, DIMENSIONS, AND THE LOCATION OF BURIED UTILITIES AT THE JOB SITE PRIOR TO THE COMMENCEMENT OF WORK. NO CLAIMS FOR EXTRA COMPENSATION FOR WORK RESULTING FROM CONFLICTS AND OMISSIONS WHICH COULD HAVE BEEN DISCOVERED BY FIELD VERIFICATION AND INSPECTION, WHETHER INDICATED IN THE CONTRACT DOCUMENTS OR NOT WILL BE ENTERTAINED OR PAID.
4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
10. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. FLOCK SAFETY AND CONTRACTOR ARE SOLELY RESPONSIBLE FOR DETERMINATION AND CONFIRMATION THAT THE PROPOSED POLE LOCATION IS WITHIN THE PUBLIC RIGHT OF WAY. SITE PLAN AND ALL REPRESENTATION OF RIGHT OF WAY PROPERTY LINES ARE APPROXIMATE BY NATURE AND HAVE BEEN PRODUCED WITHOUT THE BENEFIT OF A PROFESSIONAL LAND SURVEY.

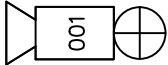
1. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH APPLICABLE LAYOUTS FROM THE MOST RECENT VERSION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION (WISDOT) WISCONSIN WORK ZONE FIELD MANUAL ([HTTPS://WISCONSINDOT.GOV/DTSDMANUALS/TRAFFIC-OPS/MANUALS-AND-STANDARDS/WZFM/WZFM.PDF](https://wisconsinidot.gov/dtsdmanuals/traffic-ops/manuals-and-standards/wzfm/wzfm.pdf)) AND IN ACCORDANCE WITH THE WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD).
2. CONTRACTOR SHALL MEET THE TRAFFIC CONTROL DEVICE QUALITY STANDARDS AS REQUIRED IN THE FIELD MANUAL AND SHALL IMMEDIATELY REPLACE UNACCEPTABLE TRAFFIC CONTROL DEVICES. SIGNS THAT ARE DIRTY AND RESULT IN A NOTICEABLE LOSS OF REFLECTIVITY AT NIGHT ARE CONSIDERED UNACCEPTABLE AND MUST BE CLEANED OR REPLACED.
3. CONTRACTOR SHALL RESPOND PROMPTLY TO ANY CALL FROM THE ENGINEER CONCERNING THE NOTIFICATION OF UNACCEPTABLE TRAFFIC CONTROL DEVICES.
4. LAYOUTS FROM THE WISCONSIN WORK ZONE FIELD MANUAL ANTICIPATED TO BE UTILIZED, BUT MAY NOT BE FULLY INCLUSIVE OF ALL APPLICABLE LAYOUTS, INCLUDE LAYOUT 6, 15, 38, 52, 53 AND 71.

EXISTING EASEMENT
CONSTRUCTION FENCE
BACK OF CURB
EDGE OF TRAVEL WAY
EDGE OF PAVEMENT
RIGHT OF WAY
EXISTING WATER LINE
EXISTING FIRE WATER LINE
EXISTING IRRIGATION WATER LINE
EXISTING SANITARY SEWER LINE
EXISTING STORM DRAIN LINE
EXISTING UNDERGROUND ELECTRIC LINE
EXISTING GAS LINE
EXISTING TELECOMMUNICATIONS LINE
EXISTING UNKNOWN UTILITY LINE



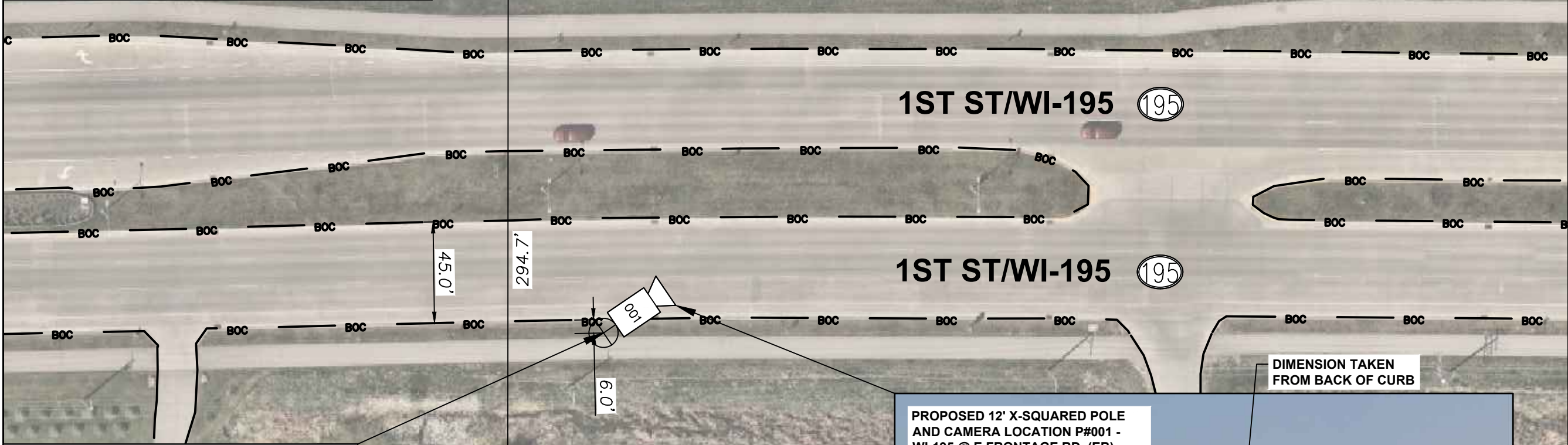
K:\RAL_Wireless\Flock\WI\1136243\1 - KHA\1136243 - FLOCK - CD\CASE#1136243_FLOCK_CD.dwg --- 07/22/25 7:06 AM by: Robert.Giesen

CAMERA DETAILS

CAMERA	NUMBER & LOCATION	COORDINATES (N,W)
	P#001 - WI-195 @ E FRONTAGE RD (EB)	42.66949291697341, -87.9485346396698

POLE TO BE LOCATED A MINIMUM OF 12' FROM FOG LINE, 6' FROM EDGE OF PAVEMENT OR 2' FROM OUTSIDE EDGE OF GRAVEL, WHICHEVER IS GREATER.

THIS PRODUCT (POLE/PANEL/CAMERA) WAS TESTED AND THE RESULTS MEET THE APPROPRIATE AASHTO MASH EVALUATION CRITERIA AND MAY BE LOCATED WITHIN THE CLEAR ZONE AS APPROVED BY WISDOT.



CAMERA P#001	
SPEED LIMIT	45 MPH
ADT	5,100 VPD
FORESLOPE	6:1
CLEAR ZONE	16-18 FT (6' BOC)

NOTES:

- ALL DIMENSIONS TO BE TAKEN FROM FACE OF POLE BASE.
- LPR POLE ASSEMBLY SHALL BE A MINIMUM OF 10-FT AWAY FROM EXISTING SIGNS OR STRUCTURES.

GRAPHIC SCALE IN FEET

0

25

50

100

NORTH

ASSIST PEDISTRIANS AND THOSE PERSON IN WHEELCHAIRS OR OTHER PERSONAL ASSISTIVE MOBILITY DEVICES AS NEEDED TO SAFELY NAVIGATE THE WORK AREA.

THE CONTRACTOR SHALL EITHER KEEP THE EXISTING PATH/SIDEWALK OPEN, SAFE AND CLEAN FOR PEDESTRIANS OR PROVIDE ALTERNATIVE TEMPORARY ACCOMMODATIONS THAT COMPLY WITH THE FDM, SDD 15D30 AND THE PROVISIONS IN THIS PERMIT.



PROJECT INFORMATION:

MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
INSTALLATION

PLANS PREPARED BY:



421 FAYETTEVILLE STREET,
SUITE 600,
RALEIGH, NC 27601
PHONE: (919) 677-2000
WWW.KIMLEY-HORN.COM

REV: 8 DATE: 07/16/25 ISSUED FOR: PERMITTING MRD

LICENSER:



KHA PROJECT NUMBER:

014681002.1.100

DRAWN BY: TLW CHECKED BY: HT

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

S.01

Re: Request to Update Approved Permit Locations with MASH Proveli Pole

 Danielle Mayberry <dani.mayberry@flocksafety.com>
To: DOT CO ROW Permits

 Reply

 Reply All

 Forward





Fri 8/15/2025 9:24 AM

Archive Never

 Follow up. Start by Friday, August 15, 2025. Due by Friday, August 15, 2025.
This message is part of a tracked conversation. Click here to find all related messages or to open the original flagged message.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.

Yes, that will be the plan!

On Fri, Aug 15, 2025 at 9:39 AM DOT CO ROW Permits <DOTCOROWPermits@dot.wi.gov> wrote:

Hi Dani,

I'm reviewing this permit "Mount Pleasant DOT Permitting Picard Wisconsin (DOT) Southeast Region, Right-of-Way 1136243" and noticed the X-squared pole has been submitted. Is Flock going to be moving forward with the Proveli pole, or will it be both the X-squared pole or Proveli pole? If Flock wants to start using the Proveli pole, this Mount Pleasant permit could be updated now instead of getting an amendment for it later.

Thank you,

Kathy



Kathy Jennings, PE
Bureau of Highway Maintenance
Wisconsin Department of Transportation

(608) 261-8976 office
kathy.jennings@dot.wi.gov
wisconsindot.gov


DESIGN NOTES

1. POLE AND FOUNDATIONS ARE DESIGNED IN ACCORDANCE WITH THE FOLLOWING CODES:

1.1. 2021 INTERNATIONAL BUILDING CODE

1.2. AASHTO LRFD SPECIFICATIONSFOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, LUMIN, TRAFFIC SIGNALS, 2015 EDITION.
2. POLE ANALYSIS AND FOUNDATION DESIGN ARE BASED ON THE FOLLOWING CRITERIA

2.1. DESIGN WIND SPEED (Vultt): (SEE SECTION 2.6)

2.2. RISK CATEGORY: II

2.3. EXPOSURE CATEGORY: C

2.4. TOPOGRAPHIC CATEGORY: 1

2.5. SEISMIC DESIGN CRITERIA:

2.5.1. SOIL SITE CLASS: D (ASSUMED)

2.5.2. SPECTRAL RESPONSE, Ss: 1.000g (MAXIMUM)

2.5.3. SPECTRAL RESPONSE, S1: 0.400G (MAXIMUM)

2.5.4. SEISMIC DESIGN CATEGORY: B

2.6. STRUCTURE BASE REACTIONS ARE CALCULATED AS FOLLOWS:

DESIGN WIND SPEED (MPH)	MOMENT (K-FT)	SHEAR (KIP)	AXIAL (KIP)
115	2.70	0.280	0.160
125	3.20	0.330	0.160
135 (MAX)	3.70	0.380	0.160

2.7. SHOULD ANY OF THE SITE-SPECIFIC PARAMETERS BE HIGHER THAN WHAT IS NOTED ABOVE, THE EOR SHALL BE CONTACTED TO PROVIDE A REVISED DESIGN.

3. CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO INSTALLATION.

4. FOUNDATION TO CONSIST OF CONCRETE SURROUNDING THE PROPSD POLE WITH A MINMUM OF 3,000-PSI COMPRESSIVE STRENGTH.

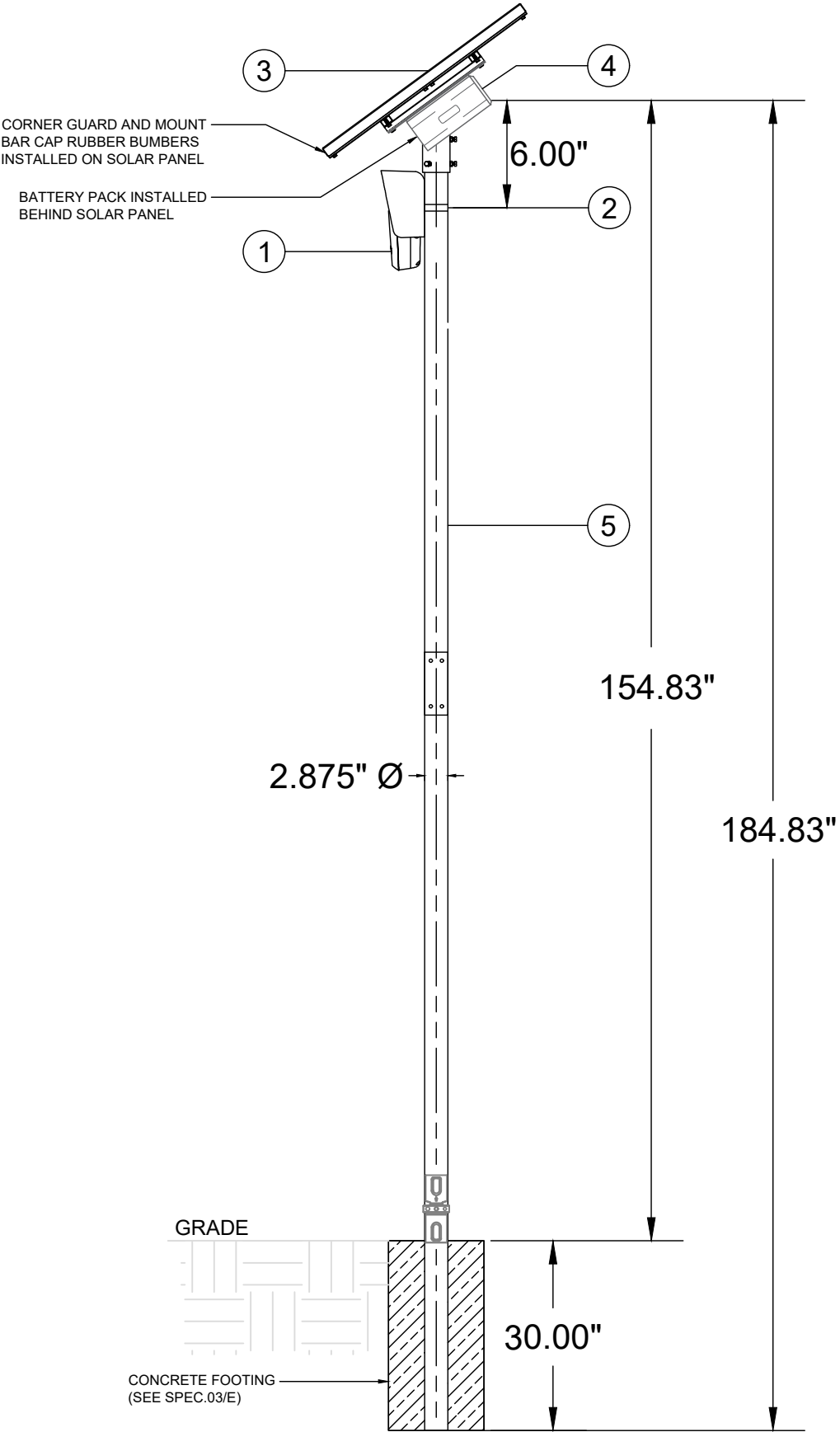
GENERAL & CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT DESIGNATED AGENCY TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL APPLY AND OBTAIN AN APPROVED TRAFFIC CONTROL PLAN IN ACCORDANCE WITH MUTCD AND LOCAL JURISDICTION STANDARDS.
3. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO ORIGINAL SITE CONDITION TO THE SATISFACTION OF STATE DEPARTMENT OF TRANSPORTATION AND LOCAL JURISDICTION.
4. ALL WORK SHALL CONFORM TO APPLICABLE ELECTRICAL CODES EXCEPT WHEN STATE DEPARTMENT OF TRANSPORTATION OR LOCAL JURISDICTION STANDARDS SUPERSEDE.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS DEFINED BY THE STATE DEPARTMENT OF TRANSPORTATION OR LOCAL JURISDICTION, UNLESS SPECIFICALLY STATED OR SHOWN OTHERWISE HEREIN.

ADA COMPLIANCE NOTES

1. ALL SIDEWALK CONSTRUCTION SHALL BE IN ACCORDANCE WITH ADA TITLE II, STATE DEPARTMENT OF TRANSPORTATION, AND LOCAL JURISDICTION STANDARDS,
2. STATE DEPARTMENT OF TRANSPORTATION CURRENT EDITION STANDARDS SHALL BE USED FOR PEDESTRIAN CONTROL PLANS WHEN CLOSURE OF SIDEWALK IS REQUIRED FOR CONSTRUCTION.
3. MINIMUM CLEAR PEDESTRIAN ACCESS ROUTE (PAR) SHALL BE 48" WIDE.
4. NO OBSTRUCTION IS PERMITTED ALONG THE WIDTH OF THE SIDEWALK. UP TO AN ELEVATION OD 7'-0" ABOVE GRADE.

ITEM NO.	PART NUMBER	DESCRIPTION	TOTAL WEIGHT (LB)	QTY.
1	701-0059	FLOCK SAFETY CAMERA	3.6	1
2	201-00087	MOUNTING CLAMP	2.0	1
3	702-00080	65W SOLAR KIT	18.0	1
4	702-00028 / 701-00111	BATTERY PACK	4.0 (APPROX)	3 (MAX)
5	1020-01	PROVELI BREAKAWAY STYLE 7 COUPLER ASSEMBLY	229.39	1



1 POLE ELEVATION DETAIL

SCALE: N/A

flock safety

1170 HOWELL MILL ROAD SUITE 210
ATLANTA, GA 30318

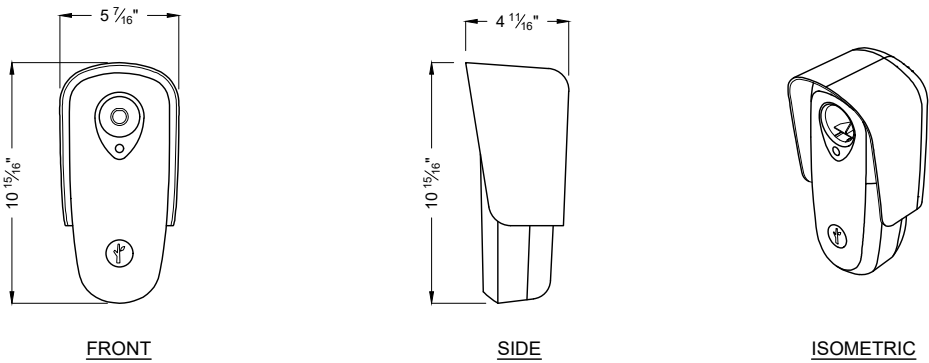
REV	DATE	BY	DESCRIPTION
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
0	09/05/2024	JMW	TYP DETAIL

THIS PRODUCT (POLE/
PANEL/CAMERA) WAS
TESTED AND THE
RESULTS MEET THE
APPROPRIATE AASHTO
MASH EVALUATION
CRITERIA AND MAY BE
LOCATED WITHIN THE
CLEAR ZONE AS
APPROVED BY
WISDOT.

LICENSE PLATE READER CAMERA
INSTALLATION

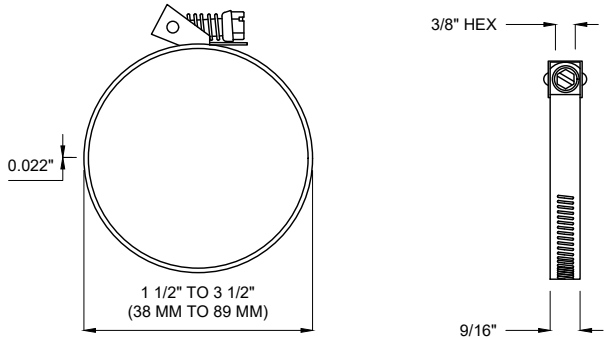
SHEET:
SPEC.01

REV:
0



SUPPLIED BY FLOCK SAFETY
MODEL 701-00059
WEIGHT: 3.5 LB
MOUNTING HARDWARE:
MCMaster-CARR
QUICK-RELEASE CLAMP
PART #: 5322K58
OR AN APPROVED EQUIVALENT

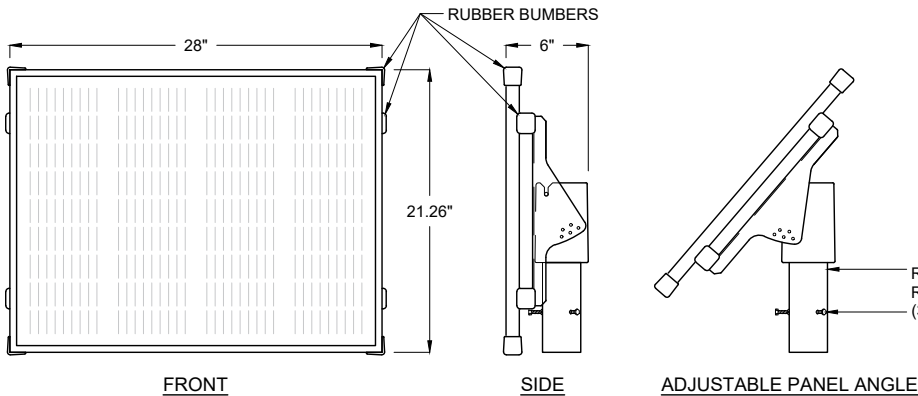
1 FLOCK AUTOMATIC LICENSE PLATE READER CAMERA
Scale: N/A



MANUFACTURER:
MCMaster-CARR
QUICK-RELEASE CLAMP
PART #: 5322K58
OR AN APPROVED EQUIVALENT
130 MPH WIND RATING

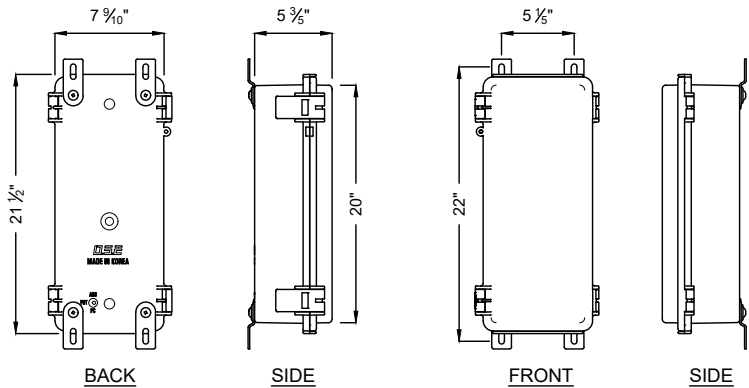
NOTE: LARGER DIAMETER POLES
WILL USE AN EQUIVALENT 201
STAINLESS STEEL STRAPPING
CUT TO LENGTH.

2 MOUNTING CLAMP
Scale: N/A



SUPPLIED BY FLOCK SAFETY
MODEL 702-00080
WEIGHT: 18 LB.
MOUNTING HARDWARE:
(3) M6 BOLTS

3 65 WATT SOLAR PANEL AND MOUNT ASSEMBLY (TOP MOUNTED)
Scale: N/A



SUPPLIED BY FLOCK SAFETY
MODEL 701-00111
WEIGHT: 3.5 LB (APPROX)
MOUNTING HARDWARE:
MCMaster-CARR
QUICK-RELEASE CLAMP
PART #: 5322K58
OR AN APPROVED EQUIVALENT

4 EXTERNAL BATTERY PACK
SCALE: N/A

flock safety

1170 HOWELL MILL ROAD SUITE 210
ATLANTA, GA 30318

REV	DATE	BY	DESCRIPTION
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
0	09/05/2024	JMW	TYP DETAIL

THIS PRODUCT (POLE/
PANEL/CAMERA) WAS
TESTED AND THE
RESULTS MEET THE
APPROPRIATE AASHTO
MASH EVALUATION
CRITERIA AND MAY BE
LOCATED WITHIN THE
CLEAR ZONE AS
APPROVED BY
WISDOT.

LICENSE PLATE READER CAMERA
INSTALLATION

SHEET:
SPEC.02

REV:
0

ITEM NO.	DESCRIPTION	QTY.
1	0.250-20 X 0.750 BT TX TAMPER-RESISTANT	6
2	2" SCH 40 2.375OD 0.154WALL - GALVANIZED STEEL	1
3	2.875OD X 0.203 WALL X 33.000L - 6061-T6 ALUMINUM	1
4	2.875OD X 0.203 WALL X 60.875L - 6061-T6 ALUMINUM	1
5	2.875OD X 0.203 WALL X 90.000L - 6063-T52 ALUMINUM	1
6	BRAIDED SLEEVE	1
7	BREAKAWAY ROUND POST 2.875OD	1
8	CONCRETE FOOTING	1
9	HBOLT ANTI ROTATION	1
10	INSERT SLEEVE STYLE 7 TAPPED	1
11	ORING SQ	1
12	WASHER 0.250 SPLIT LOCK 0.260 X 0.487 X 0.062	6
13	BOLT 0.250-20 X 3.500 X 0.750 HX BLACK WITH NUT 0.250-20 HX BLACK	1

PROVELI MASH DETAILS

BREAKAWAY STYLE 7 COUPLER ASSEMBLY

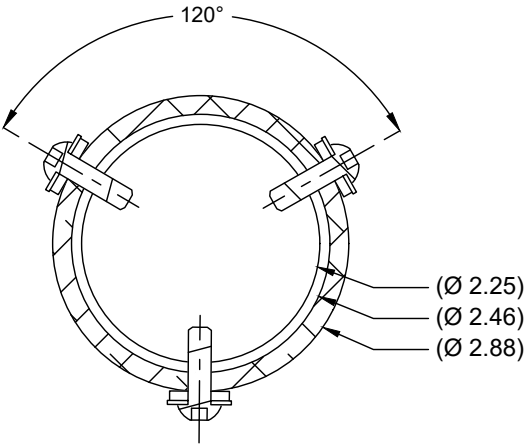
PART #: SP-7/MASH

MATERIAL: VARIES

WEIGHT: 229.39 LBS

DATE: 01/11/2024

DO NOT SCALE DRAWINGS (NTS)



SECTION C-C

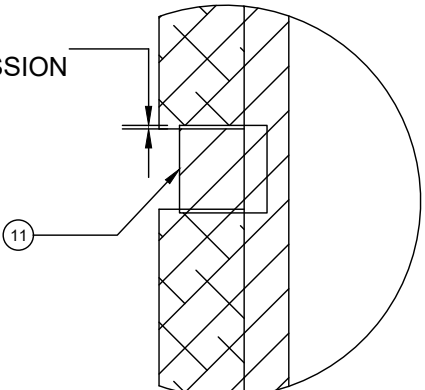
flock safety

1170 HOWELL MILL ROAD SUITE 210
ATLANTA, GA 30318

REV	DATE	BY	DESCRIPTION
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-	-	-	-
0	09/05/2024	JMW	TYP DETAIL

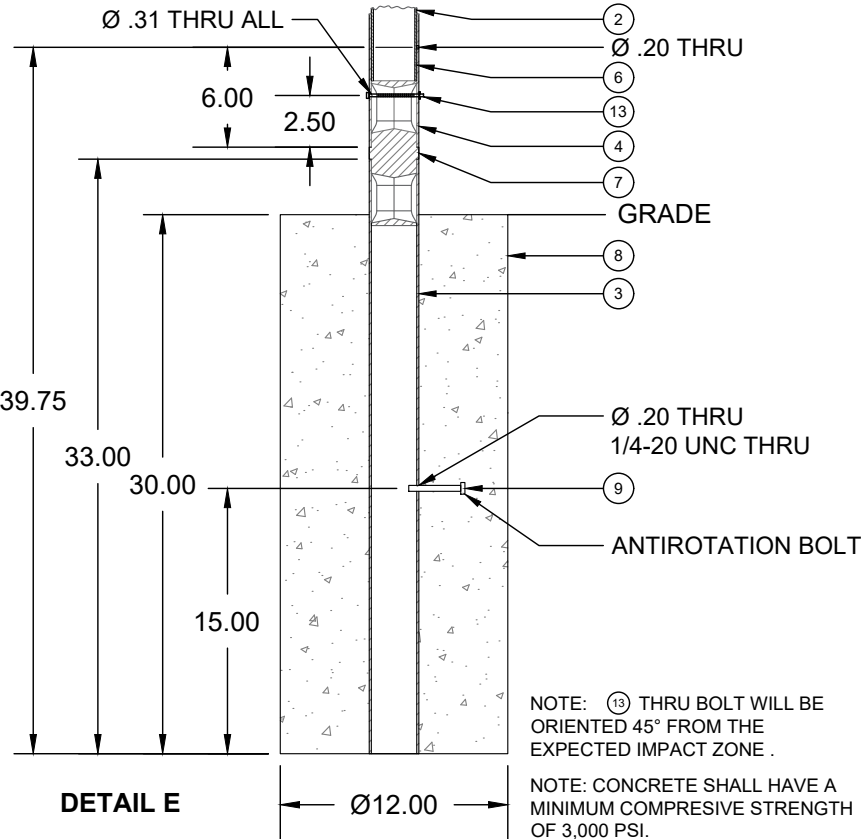
THIS PRODUCT (POLE/
PANEL/CAMERA) WAS
TESTED AND THE
RESULTS MEET THE
APPROPRIATE AASHTO
MASH EVALUATION
CRITERIA AND MAY BE
LOCATED WITHIN THE
CLEAR ZONE AS
APPROVED BY
WISDOT.

.01 ORING
COMPRESSION

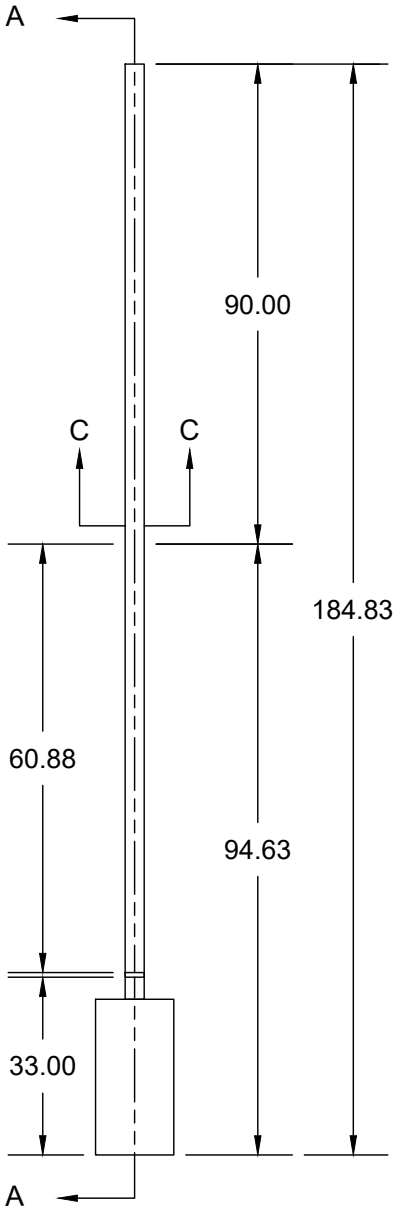


DETAIL D

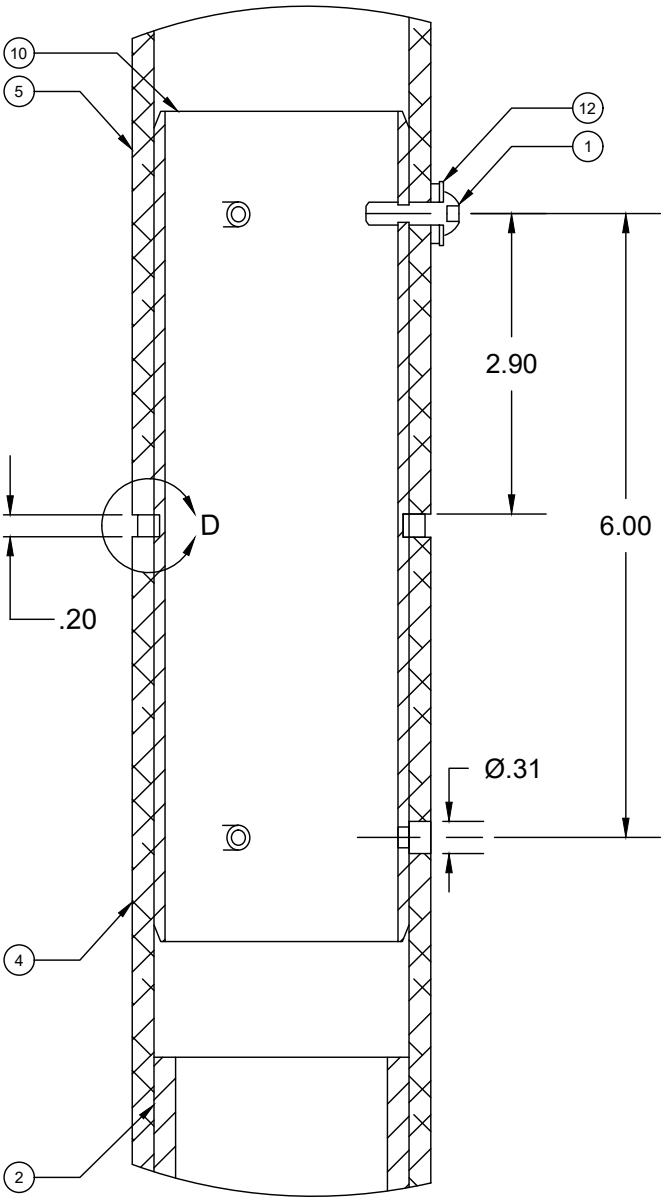
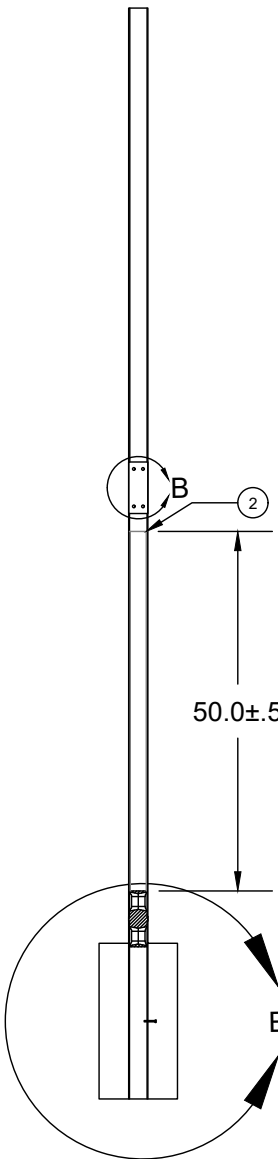
Ø .31 THRU ALL



DETAIL E



SECTION A-A



DETAIL B

THIS PRODUCT (POLE/PANEL/CAMERA) WAS TESTED AND THE RESULTS MEET THE APPROPRIATE AASHTO MASH EVALUATION CRITERIA AND MAY BE LOCATED WITHIN THE CLEAR ZONE AS APPROVED BY WISDOT.

DESIGN NOTES

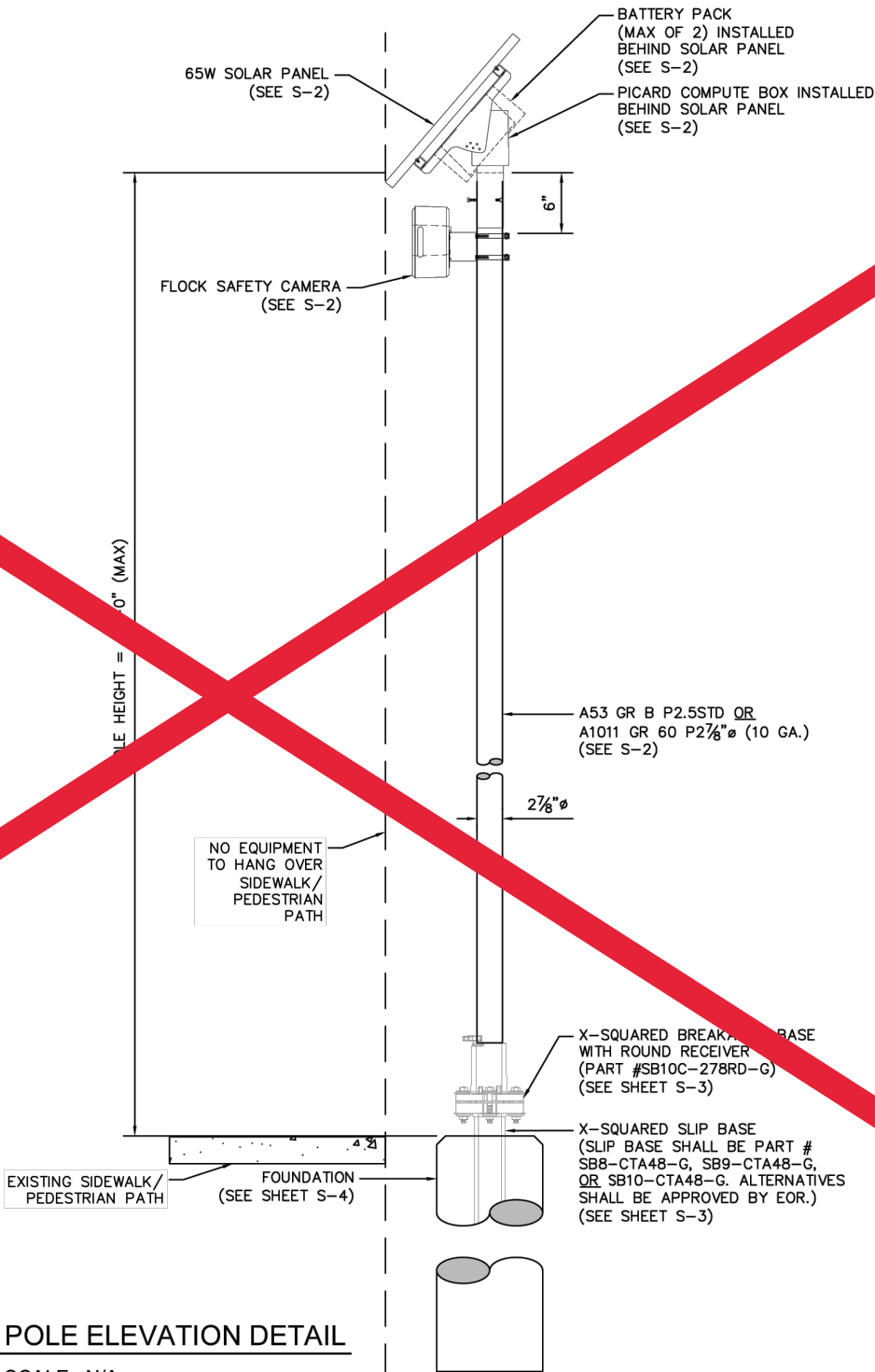
1. POLE AND FOUNDATIONS ARE DESIGNED IN ACCORDANCE WITH THE FOLLOWING CODES:
- 1.1. 2015 INTERNATIONAL BUILDING CODE
 - 1.2. AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 2015 EDITION.
2. POLE ANALYSIS AND FOUNDATION DESIGN ARE BASED ON THE FOLLOWING CRITERIA:
- 2.1. DESIGN WIND SPEED (Vult): 115 MPH (MAXIMUM)
 - 2.2. RISK CATEGORY: II
 - 2.3. EXPOSURE CATEGORY: C
 - 2.4. TOPOGRAPHIC CATEGORY: 1
 - 2.5. SEISMIC DESIGN CRITERIA:
 - 2.5.1. SOIL SITE CLASS: D (ASSUMED)
 - 2.5.2. SPECTRAL RESPONSE, S_s: 0.300g (MAXIMUM)
 - 2.5.3. SPECTRAL RESPONSE, S₁: 0.150g (MAXIMUM)
 - 2.5.4. SEISMIC DESIGN CATEGORY: B
 - 2.6. STRUCTURE BASE REACTIONS ARE CALCULATED AS FOLLOWS:
 - ULTIMATE BASE MOMENT: 2,418 LB-FT
 - ULTIMATE BASE SHEAR: 246 LB
 - ULTIMATE BASE AXIAL: 137 LB
 - 2.7. SHOULD ANY OF THE SITE-SPECIFIC PARAMETERS BE HIGHER THAN WHAT IS NOTED ABOVE, THE EOR SHALL BE CONTACTED TO PROVIDE A REVISED DESIGN.
3. POLE STRUCTURE SHALL BE INSTALLED ON A FOUNDATION WITH A FLAT BEARING SURFACE. THE TOP OF THE TOP OF THE FOUNDATION OUTSIDE OF THE BASE PLATE FOOTPRINT SHALL BE SLOPED BETWEEN 1" AND 3" TO ALLOW FOR ADEQUATE DRAINAGE.
4. THE PROPOSED DETAILS OF THIS DRAWING SHALL NOT BE USED WHERE SOILS CONSIST OF SOFT CLAY, PEAT, OR SOIL WHERE A SMALL DIAMETER REBAR (#5 OR SMALLER) OR METAL PROBE PENETRATES EASILY INTO THE SOIL BY MORE THAN 6" WHEN THE FULL WEIGHT OF A PERSON IS APPLIED. IF UNEXPECTED SOIL IS FOUND ON SITE, THE CONTRACTOR SHALL CONTACT THE EOR FOR DIRECTION.

GENERAL & CONSTRUCTION NOTES

- 1. CONTRACTOR SHALL CONTACT DESIGNATED AGENCY TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- 2. CONTRACTOR SHALL APPLY AND OBTAIN AN APPROVED TRAFFIC CONTROL PLAN IN ACCORDANCE WITH MUTCD AND LOCAL JURISDICTION STANDARDS.
- 3. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO ORIGINAL SITE CONDITION TO THE SATISFACTION OF STATE DEPARTMENT OF TRANSPORTATION AND LOCAL JURISDICTION.
- 4. ALL WORK SHALL CONFORM TO APPLICABLE ELECTRICAL CODES EXCEPT WHEN STATE DEPARTMENT OF TRANSPORTATION OR LOCAL JURISDICTION STANDARDS SUPERSEDE.
- 5. POLE AND PROPOSED EQUIPMENT SHALL BE CONNECTED TO SOLID BARE BOND GROUND AND GROUNDING ROD IN POLE FOUNDATION.
- 6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS DEFINED BY THE STATE DEPARTMENT OF TRANSPORTATION OR LOCAL JURISDICTION, UNLESS SPECIFICALLY STATED OR SHOWN OTHERWISE HEREIN.

ADA COMPLIANCE NOTES

- 1. ALL SIDEWALK CONSTRUCTION SHALL BE IN ACCORDANCE WITH ADA TITLE II, STATE DEPARTMENT OF TRANSPORTATION, AND LOCAL JURISDICTION STANDARDS.
- 2. STATE DEPARTMENT OF TRANSPORTATION CURRENT EDITION STANDARDS SHALL BE USED FOR PEDESTRIAN CONTROL PLANS WHEN CLOSURE OF SIDEWALK IS REQUIRED FOR CONSTRUCTION.
- 3. MINIMUM CLEAR PEDESTRIAN ACCESS ROUTE (PAR) SHALL BE 48" WIDE.
- 4. NO OBSTRUCTION IS PERMITTED ALONG THE WIDTH OF THE SIDEWALK UP TO AN ELEVATION OF 7'-0" ABOVE GRADE.



1 POLE ELEVATION DETAIL
S-1 SCALE: N/A

flock safety

PROJECT INFORMATION:

SINGLE CAMERA
CONFIGURATION
(X-SQRD BREAKAWAY SYSTEM)
AUTOMATIC LICENSE
PLATE READER AND
SOLAR PANEL SYSTEM

KimleyHorn

817 WEST PEACHTREE STREET,
N.W., SUITE 601,
ATLANTA, GA 30308
PHONE: (404) 419-8700
WWW.KIMLEY-HORN.COM

REV: DATE: ISSUED FOR: BY:

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3			
2			
1	12/19/24	CONSTRUCTION	HWT
0	12/05/24	CONSTRUCTION	HWT

LICENSER:



KHA PROJECT NUMBER:

014681002

DESIGNED BY: CHECKED BY:

HWT

GENERAL NOTES
AND POLE
ASSEMBLY DETAIL

SHEET NUMBER:

S-1

flock safety

PROJECT INFORMATION:

MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
INSTALLATION

PLANS PREPARED BY:

KimleyHorn

421 FAYETTEVILLE STREET,
SUITE 600,
RALEIGH, NC 27601
PHONE: (919) 677-2000
WWW.KIMLEY-HORN.COM

REV: DATE: ISSUED FOR: BY:

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1			
0	07/16/25	PERMITTING	MRD

LICENSER:



KHA PROJECT NUMBER:

014681002.1.100

DRAWN BY: CHECKED BY:

TLW

HT

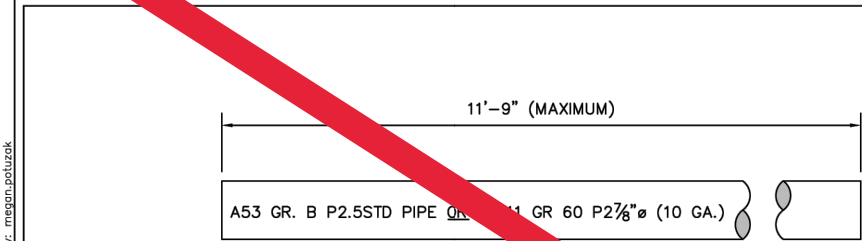
SHEET TITLE:

EQUIPMENT AND
FOUNDATION
DETAILS

SHEET NUMBER:

D.01

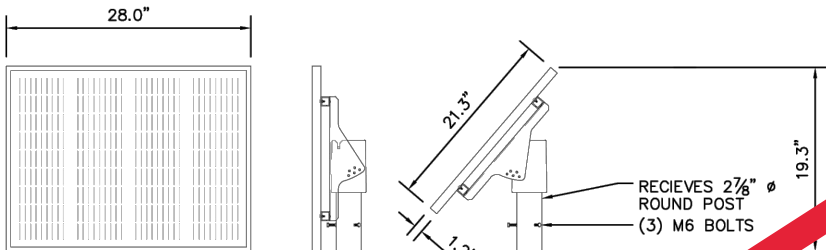
K:\RAL_Wireless\Flock\1136243\1 - KHA\1136243 - FLOCK - CD\1136243-FLOCK_CD.dwg 07/22/25 7:06 AM by: Robert.Giesen



PIPE SHALL BE HOT DIP GALVANIZED

PIPE DETAIL

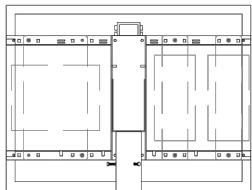
65 WATT SOLAR PANEL WEIGHT = 18 LB. (APPROX.)



FRONT

SIDE

ADJUSTABLE PANEL ANGLE



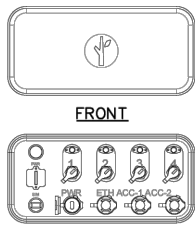
BACK



TOP

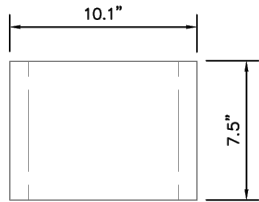
65 WATT SOLAR PANEL DETAIL (TOP MOUNTED)

FLOCK PICARD COMPUTE BOX WEIGHT = 4.6 LB. (APPROX.)

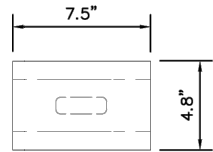


FRONT

BACK



TOP

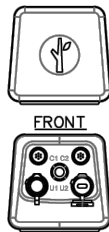


SIDE

FLOCK PICARD COMPUTE BOX

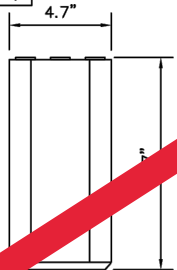
MOUNTING HARDWARE TO BE PROVIDED BY FLOCK SAFETY

FLOCK EXTERNAL BATTERY WEIGHT = 5.9 LB. (APPROX.)

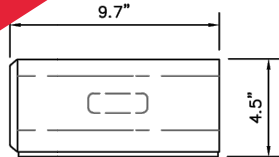


FRONT

BACK



TOP

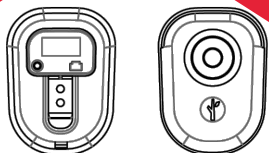


SIDE

FLOCK EXTERNAL BATTERY

MOUNTING HARDWARE TO BE PROVIDED BY FLOCK SAFETY

FLOCK SAFETY CAMERA WEIGHT = 4.2 LB. (APPROX.)

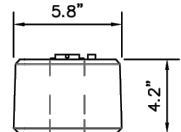


BACK

FRONT



SIDE



TOP

FLOCK SAFETY CAMERA

MOUNTING HARDWARE TO BE PROVIDED BY FLOCK SAFETY

Flock safety

PROJECT INFORMATION:

SINGLE CAMERA
CONFIGURATION
(X-SQRD BREAK GLASS SYSTEM)
AUTOMATIC LICENSE
PLATE READER AND
SOLAR PANEL SYSTEM

PREPARED BY:

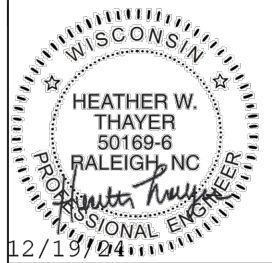
KimleyHorn

817 WEST PEACHTREE STREET,
N.W., SUITE 601,
ATLANTA, GA 30308
PHONE: (404) 419-8700
WWW.KIMLEY-HORN.COM

REV: DATE: ISSUED FOR: BY:

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1	12/19/24	CONSTRUCTION	HWT
0	12/05/24	CONSTRUCTION	HWT

LICENSER:



KHA PROJECT NUMBER:

014681002

DRAWN BY: CHECKED BY:

TLW HWT

SHEET

EQUIPMENT
DETAILS

SHEET NUMBER:

S-2

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Flock safety

PROJECT INFORMATION:

MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
INSTALLATION

PLANS PREPARED BY:

KimleyHorn

421 FAYETTEVILLE STREET,
SUITE 600,
RALEIGH, NC 27601
PHONE: (919) 677-2000
WWW.KIMLEY-HORN.COM

REV: DATE: ISSUED FOR: BY:

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0	07/16/25	PERMITTING	MRD

LICENSER:



KHA PROJECT NUMBER:

014681002.1.100

DRAWN BY: CHECKED BY:

TLW HT

SHEET TITLE:

EQUIPMENT AND
FOUNDATION
DETAILS

SHEET NUMBER:

D.02

Copyright Kimley-Horn and Associates, Inc., 2022

flock safety™			
PROJECT INFORMATION: _____			
MOUNT PLEASANT POLICE DEPARTMENT LICENSE PLATE READER INSTALLATION			
PLANS PREPARED BY: _____			
Kimley»Horn 421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601 PHONE: (919) 677-2000 WWW.KIMLEY-HORN.COM			
REV: _____ DATE: _____ ISSUED FOR: _____ BY: _____			
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0	07/16/25	PERMITTING	MRD
LICENSER: _____			
FOR REFERENCE ONLY			
KHA PROJECT NUMBER: _____			
014681002.1.100			
DRAWN BY: _____ CHECKED BY: _____			
TLW		HT	
SHEET TITLE: _____			
EQUIPMENT AND FOUNDATION DETAILS			
SHEET NUMBER: _____			
D.03			

K:\RAL_Wireless\Flock\W\1136243\1 - KHATL - 1136243 - FLOCK - CD\CDs\CASE#1136243_FLOCK_CD.dwg ----- 07/22/25 7:06 AM by: Robert.Giesen

K:\RAL_Wireless\Flock (Structural)\KHFS-3953 (W) (X-Squared Picard Configurations)\1 LPR Picard Configuration\R1\CAD\FLOCK_POLE_DETAIL_XSQRD_PICARD_1CAMERA_WL_R1.dwg ----- 12/19/24 11:53 AM by: megan.potluzok

FOUNDATION DESIGN NOTES

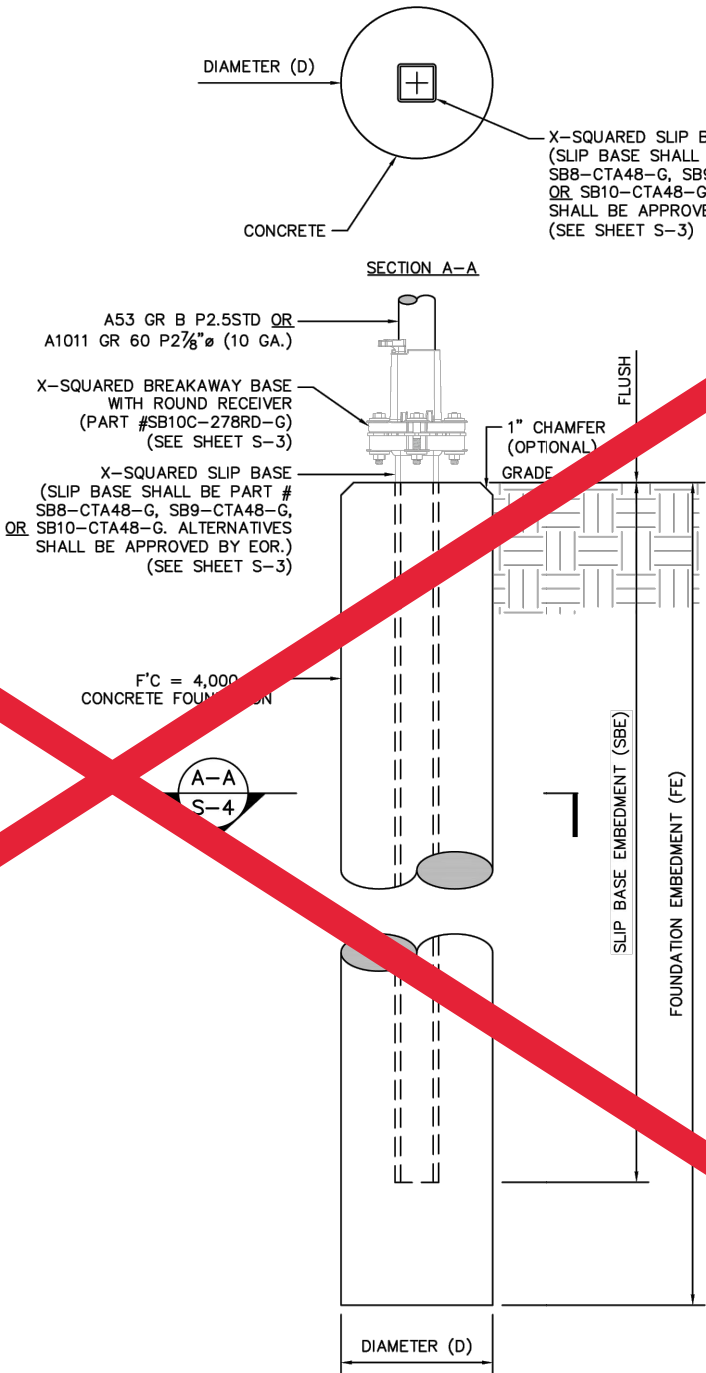
- FOUNDATION DESIGN REQUIREMENTS ARE BASED ON INTERNAL CALCULATIONS BY KIMLEY-HORN. ANALYSIS CRITERIA CAN BE FOUND ON SHEET S-1.
- FOUNDATION MAY BE CAST-IN-PLACE, OR PRECAST.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI
 - MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 26
 - COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE #57
 - COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1
 - HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R
- ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED.
- CONTRACTOR SHALL VERIFY THAT THE PROPOSED FOUNDATION SHALL BE BUILT AS SHOWN. CONTRACTOR SHALL OBTAIN EOR APPROVAL FOR ANY CHANGES TO THE PROPOSED DESIGN.
- CONTRACTOR SHALL FIELD VERIFY THE PRESENCE OF GROUNDWATER IN THE TOP 10-FT OF SOIL PRIOR TO CONSTRUCTION. IF GROUNDWATER IS ENCOUNTERED, ONE OF THE FOLLOWING METHODS SHALL BE IMPLEMENTED:
 - THE CONTRACTOR SHALL PUMP EXCESS WATER OUT OF A BORE HOLE THROUGHOUT THE FULL EMBEDMENT DEPTH. SOIL BACKFILL SHALL BE PROPERLY COMPACTED TO A MINIMUM OF 95% OF STANDARD MAXIMUM DENSITY (ASTM D1557) (100 PCF MINIMUM).
 - A PL $\frac{1}{4}$ " TEMPORARY CASING MAY BE USED DURING INSTALLATION. THE CASING SHALL BE EXTENDED AS THE CONCRETE IS PLACED SUCH THAT A HEAD OF CONCRETE IS MAINTAINED ABOVE THE BOTTOM OF THE CASING TO PREVENT WATER INTRUSION INTO THE CONCRETE MIX.

FOUNDATION DESIGN TABLE

DIAMETER (D)	FOUNDATION EMBEDMENT (FE)	SLIP BASE EMBEDMENT (SBE)
12"Ø (SEE NOTE 2.1)	5'-0" (SEE NOTE 2)	3'-3" (MINIMUM)

DESIGN TABLE NOTES:

- DRAWINGS DENOTE A GENERIC FOUNDATION CONFIGURATION AND ARE NOT TO SCALE. REFER TO FOUNDATION DESIGN TABLE FOR DETAILS.
- FOUNDATION EMBEDMENT (FE) SHALL BE THE MAXIMUM OF THE DIMENSIONS SPECIFIED, OR 6" BELOW THE FROST DEPTH APPLICABLE TO THE SITE LOCATION. CONTRACTOR SHALL VERIFY FROST DEPTH PRIOR TO CONSTRUCTION. SEE SHEET R-1 FOR ADDITIONAL INFORMATION.
 - FOR FOUNDATION EMBEDMENTS (FE) THAT EXCEED 6'-6" TO ACHIEVE FROST DEPTH REQUIREMENTS, THE FOUNDATION DIAMETER SHALL BE 16"Ø.



1 FOUNDATION DETAIL
S-4 SCALE: N/A

flock safety

PROJECT INFORMATION:

SINGLE CAMERA
CONFIGURATION (X-SQRD BREAKAWAY SYSTEM)
AUTOMATIC LICENSE
PLATE READER AND
PANEL SYSTEM

PREPARED BY:

Kimley»Horn

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SUITE 601,
ATLANTA, GA 30308
PHONE: (404) 419-8700
WWW.KIMLEY-HORN.COM

REV: DATE: ISSUED FOR: BY:

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LICENSER:



KHA PROJECT NUMBER:

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DRAWN BY: CHECKED BY:

TLW HWT

SHEET

FOUNDATION
DETAILS

SHEET NUMBER:

S-4

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flock safety

PROJECT INFORMATION:

MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
INSTALLATION

PLANS PREPARED BY:

Kimley»Horn

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SHEET TITLE:

EQUIPMENT AND
FOUNDATION
DETAILS

SHEET NUMBER:

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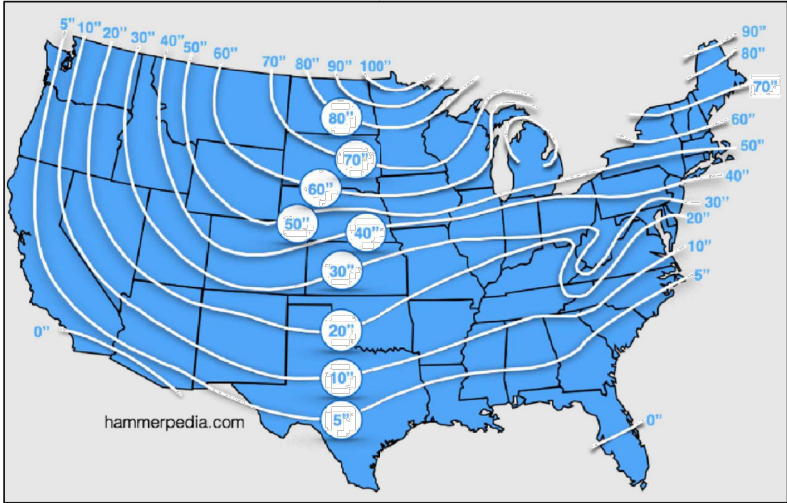
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K:\RAL_Wireless\Flock\WI\1136243\1 - KHATL - 1136243 - FLOCK - CD.s CASE#1136243_FLOCK_CD.dwg 07/22/25 7:06 AM by: Robert.Giesen

K:\RAL_Wireless\Flock (Structural)\KHFS-3953 (WI) (X-Squared Picard Configurations)\1 LPR Picard Configuration\R1\CAD\FLOCK_POLE_DETAIL_XSQRD_PICARD_1CAMERA_WI_R1.dwg 12/19/24 11:53 AM by: megan.potuzak

FROST DEPTH NOTES

1. ESTIMATED FROST DEPTHS FOR VARIOUS COUNTIES ARE LISTED IN THE PROVIDED TABLES.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING FROST DEPTHS WITH THE LOCAL JURISDICTION REQUIREMENTS.



State	County	Design Frost Depth (in.)
WI	ADAMS	70
WI	ASHLAND	80
WI	BARRON	80
WI	BAYFIELD	80
WI	BROWN	60
WI	BUFFALO	80
WI	BURNETT	80
WI	CALUMET	60
WI	CHIPPEWA	80
WI	CLARK	70
WI	COLUMBIA	60
WI	CRAWFORD	70
WI	DANE	60
WI	DODGE	60
WI	DOOR	60
WI	DOUGLAS	80
WI	DUNN	80
WI	EAU CLAIRE	80
WI	FLORENCE	70
WI	FOND DU LAC	60
WI	FOREST	70
WI	GRANT	60
WI	GREEN	60
WI	GREEN LAKE	70
WI	IOWA	60
WI	IRON	80
WI	JACKSON	80
WI	JEFFERSON	60
WI	JUNEAU	70
WI	KENOSHA	60
WI	KEWAUNEE	60
WI	LA CROSSE	70
WI	LAFAYETTE	60
WI	LANGLADE	70
WI	LINCOLN	80
WI	MANITOWOC	60
WI	MARATHON	80
WI	MARINETTE	60
WI	MARQUETTE	70
WI	MENOMINEE	70
WI	MILWAUKEE	60
WI	MONROE	70
WI	OCONTO	60
WI	ONEIDA	80
WI	OUTAGAMIE	70
WI	OZAUKEE	60
WI	PEPIN	80
WI	PIERCE	80
WI	POLK	80

State	County	Design Frost Depth (in.)
WI	PORTAGE	70
WI	PRICE	80
WI	RACINE	60
WI	RICHLAND	70
WI	ROCK	60
WI	RUSK	80
WI	SAINT CROIX	80
WI	SAUK	70
WI	SAWYER	80
WI	SHAWANO	70
WI	SHEBOYGAN	60
WI	TAYLOR	80
WI	TREMPEALEAU	80
WI	VERNON	70
WI	VILAS	80
WI	WALWORTH	60
WI	WASHBURN	80
WI	WASHINGTON	60
WI	WAUKESHA	60
WI	WAUPACA	70
WI	WAUSHARA	70
WI	WINNEBAGO	70
WI	WOOD	70



PROJECT INFORMATION:

SINGLE CAMERA
CONFIGURATION DETAILS
(X-SQRD BREAKAWAY SYSTEM)
AUTOMATIC LICENSE
PLATE READER AND
SOLAR PANEL SYSTEM

PLANS PREPARED BY:

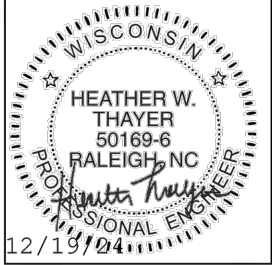


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LICENSER:



KHA PROJECT NUMBER:

014681002

DRAWN BY: CHECKED BY:

RCG

HWT

SHEET TITLE:

FROST DEPTH
REQUIREMENTS

SHEET NUMBER:

R-1

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PROJECT INFORMATION:

MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
INSTALLATION

PLANS PREPARED BY:



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SHEET TITLE:

EQUIPMENT AND
FOUNDATION
DETAILS

SHEET NUMBER:

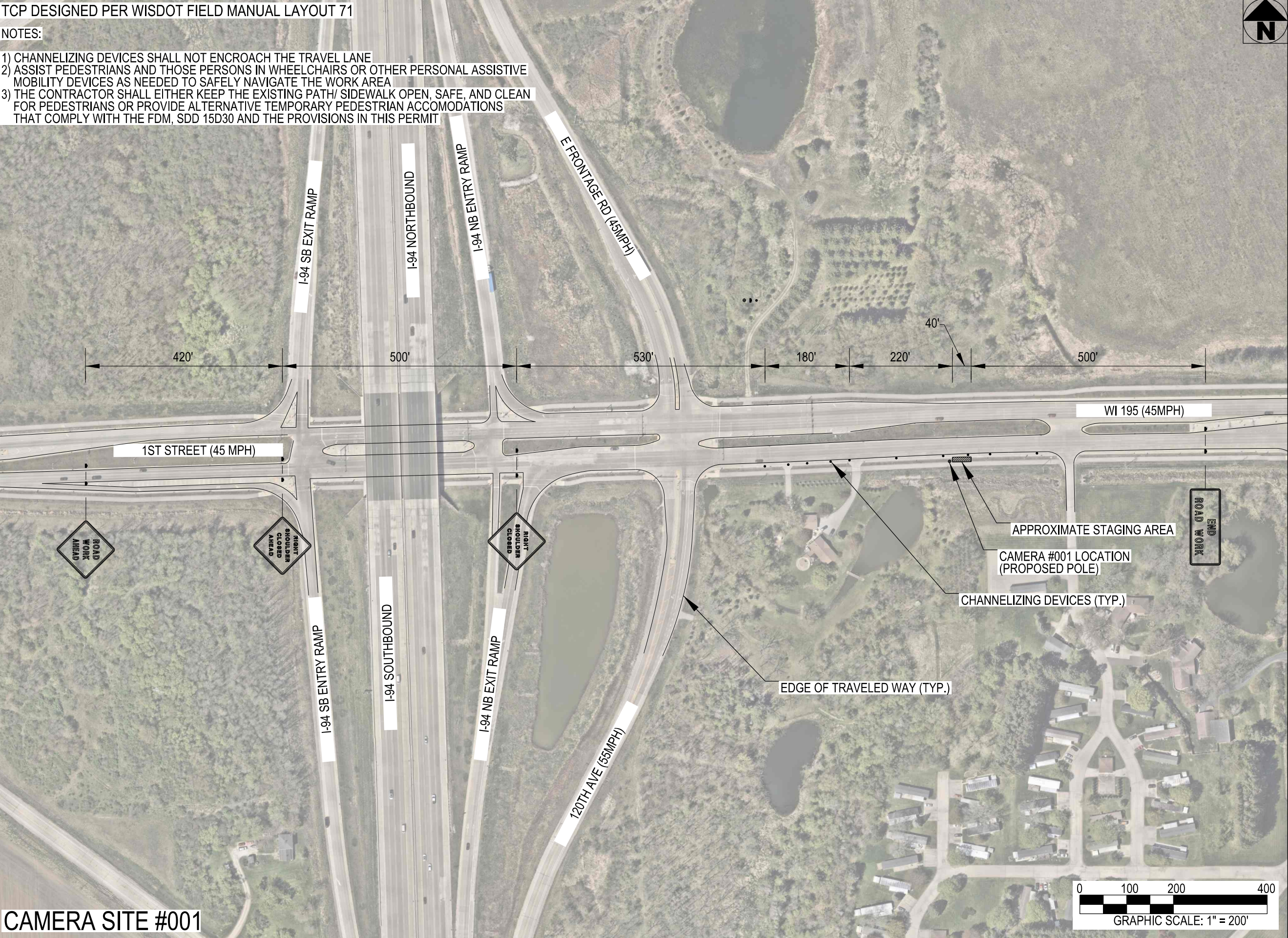
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TCP DESIGNED PER WISDOT FIELD MANUAL LAYOUT 71

NOTES:

- 1) CHANNELIZING DEVICES SHALL NOT ENCROACH THE TRAVEL LANE
- 2) ASSIST PEDESTRIANS AND THOSE PERSONS IN WHEELCHAIRS OR OTHER PERSONAL ASSISTIVE MOBILITY DEVICES AS NEEDED TO SAFELY NAVIGATE THE WORK AREA
- 3) THE CONTRACTOR SHALL EITHER KEEP THE EXISTING PATH/ SIDEWALK OPEN, SAFE, AND CLEAN FOR PEDESTRIANS OR PROVIDE ALTERNATIVE TEMPORARY PEDESTRIAN ACCOMODATIONS THAT COMPLY WITH THE FDM, SDD 15D30 AND THE PROVISIONS IN THIS PERMIT



flock safety™

PROJECT INFORMATION:

MOUNT PLEASANT
POLICE DEPARTMENT
LICENSE PLATE READER
TRAFFIC CONTROL PLANS

PLANS PREPARED BY:

Kimley»Horn

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LICENSER:



KHA PROJECT NUMBER:

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TRAFFIC CONTROL
PLAN

SHEET NUMBER:

TC.01

Attachment 1 - Environmental Checklist

Note: To print the Checklist, click on the icon and set *Pages to Print* to "© Pages 3-5"



Include this Checklist and any supplemental documentation with form dt1553, *Application/Permit to Construct, Operate and Maintain Utility Facilities on Highway Right-of-Way*. The application will be returned if the Checklist is not included or is incomplete.

Answer the following questions related to the proposed utility project to show environmental compliance or coordination with various agencies/Tribes. WisDOT's permit approval does not relieve a utility from compliance with all applicable federal, state, local and tribal laws, codes, regulations, and ordinances and shall not be construed as superseding any other governmental agency's more restrictive requirements. Keep all supporting documents on file with WisDOT's permit for its duration and provide upon request.

Remember: Supporting documentation may be required to prove environmental coordination with a regulatory agency on the Checklist. If an agency does not require documentation, a utility is not required to submit it to WisDOT. However, supply documentation if it may be helpful in WisDOT's review of the Checklist, e.g., permits, approvals, certifications, checklists, correspondence, website screenshots/PDFs, mapping, etc. Checkboxes that only have yes, no, or not applicable answers are automatically set to no or not applicable.

1. **Aquatic Resource Impacts**

Use the Wisconsin Wetland Inventory maps and the [DNR Surface Water Data Viewer](#) (SWDV) to identify waterways, surface waters and potential wetlands. These tools are not comprehensive, and field surveys may be required to identify aquatic resources within the footprint of a proposed project. Consult with Department of Natural Resources and U.S. Army Corps of Engineers as needed.

Does the proposed project have the potential to impact any aquatic resources (wetlands, waterways, etc.)?

- ☐ No – Skip to question 2 ☐ Yes – Continue below

State Wetland/Waterway Permit

Does the proposed project meet all necessary terms, conditions, and eligibility criteria to receive non-reporting coverage under the DNR utility general permit ([DNR-GP3-2023](#)) for wetland/waterway impacts?

- ☐ Yes – Project meets all requirements for DNR *non-reporting* utility general permit coverage
- ☐ No – Project received *reporting* utility general permit coverage or individual wetland/waterway permit <https://dnr.wisconsin.gov/topic/Sectors/UtilityPermitting.html>
- ☐ Not applicable – Project is exempt from all wetland/waterway permitting requirements
Wetlands: <https://dnr.wisconsin.gov/topic/Waterways/Permits/Exemptions.html>
Waterways: <https://dnr.wisconsin.gov/topic/Wetlands/permits/exemptions.html>

☐ Not applicable – Project occurs wholly within boundaries of a Native American Nation or Tribal reservation and DNR does not have jurisdiction. See question 6.

Federal Wetland/Waterway Permit

Does the proposed project meet all necessary terms, conditions, and eligibility criteria to receive no-preconstruction notification (PCN) coverage under the USACE utility or other regional general permit (RGP) or a nationwide permit (NWP) for wetland/waterway impacts?
<https://www.mvp.usace.army.mil/Missions/Regulatory/Permitting-Process-Procedures/>

- ☐ Yes – Project meets all requirements for no-PCN coverage under a USACE RGP or NWP
- ☐ No – Project covered under USACE's RGP or NWP coverage obtained through submittal of a preconstruction notification or other Section 404 permit coverage.
- ☐ Not applicable – Project does not impact waters of the United States.

2. Protected Species

Projects with the potential to affect protected species must be covered under the [DNR Broad Incidental Take Permit/Authorization for No/Low Impact Activities](#) or undergo an endangered resources preliminary assessment or review. A preliminary assessment may be completed through the [DNR Natural Heritage Inventory \(NHI Public Portal\)](#). An Endangered Resources Review may be conducted through the [Endangered Resources Review Program](#).

All components of the proposed project covered under this permit:

Are covered by the **DNR Broad Incidental Take Permit/Authorization for No/Low Impact Activities**.

☐ [Table 1](#) and additional conditions are incorporated as required OR

☐ **Table 2** and additional conditions/avoidance measures are incorporated as required.

☐ Received one of the following results from the **NHI Public Portal preliminary assessment**. WisDOT encourages implementing DNR recommended actions By requesting an [Endangered Resources Review](#).

- ☐ No further actions are needed
- ☐ Further actions are recommended
- ☐ Further actions are strongly recommended

☐ Are implementing all required actions from the **DNR Endangered Resources Review**. WisDOT also encourages implementation of DNR recommended actions.

☐ Are covered by a **DNR Individual Incidental Take Permit** and/or USFWS coordination under the Endangered Species Act.

3. Construction Site Stormwater Permits

Projects that involve one acre or more of land disturbance require a utility to submit a Notice of Intent (NOI) erosion control permit under Wis. Adm. Code [NR 216](#).

Does the proposed project affect one acre or more of land disturbance?

☐ No – Meets criterion ☐ Yes – Coordination completed

4. Erosion Control Plan & Stormwater Management Plans

Does the proposed project meet the [Trans 401](#) “Minor” category?

☐ Yes – Meets criterion for minor project ☐ No – Attach formal erosion control plan

For minor projects, immediately replace disturbed soil and topsoil and/or temporary seed and mulch the soil, which includes repairing equipment and vehicle tracks. Have erosion control devices (hay or straw bales, wattles, silt fence, erosion mat, etc.) at the site or immediately accessible in case weather conditions cause immediate action to protect bare or loose soil. Cover soil piles left overnight with plastic or protect with silt fence or other approved perimeter control devices on the downslope side to prevent possible runoff.

Does the proposed project require a Stormwater Management Plan?

☐ No – Meets criterion ☐ Yes – Coordination completed

For more information: [DNR Erosion Control and Stormwater Management Plans](#)

5. Wisconsin Historic Preservation Database

Are any historic resources located within the proposed project limits?

☐ No – Meets criterion ☐ Yes – Coordination completed

Contact: [State Historic Preservation Office](#) or go to: [Wisconsin Historic Preservation Database](#)

6. Tribal Government Coordination

Is any part of the work located within the reservation boundaries of a Native American Nation or Tribal reservation? Any utilities placed within a Native American Nation or Tribal reservation require Bureau of Indian Affairs (BIA)/Tribal approval prior to placing their facilities in WisDOT ROW.

☐ No – Meets criterion ☐ Yes – Coordination completed

Tribal Government Contacts: <http://witribes.wi.gov/>

Note: A utility must obtain a Tribal permit and BIA approval of a NEPA document to proceed with utility work on a STH within a Tribal Reservation. WisDOT's utility permit does not grant automatic approval.

7. **Open or Closed Contaminated Sites, DNR Water Supply Permit, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LUSTs)**

Does the proposed project affect any of these items?

Decision \ Item	Contaminated sites	DNR water supply permit	USTs	LUSTs
No – Meets criterion	☐	☐	☐	☐
Yes – Coordination completed	☐	☐	☐	☐

DNR: [Wisconsin Remediation and Redevelopment Database \(WRRD\)](#) and [Remediation & Redevelopment \(RR\) Program staff contacts](#)

DATCP: [MyDATCP: Storage Tank Search](#)
[Region Environmental Coordinators and Regionwide SWECE and Mega/Major project coordinators](#)

8. **Asbestos**

Does the project include replacement of asbestos wrapped utility conduit or Transite piping?

☐ No – Meets criterion ☐ Yes – Document who will complete required notification to the [DNR](#) or [DHS](#), the abatement methods, and the disposal location.

9. **Project Comments**

Provide any additional comments or extenuating circumstances that may assist in the review of the project's environmental coordination. List all utility work request, project plan set, or other identification numbers or references included in the environmental coordination and permitting of the project.

Certification Statement: Upon executing the signature below, the signatory certifies that the Checklist is complete, all information is accurate and true, and all required environmental compliance/coordination is complete and on file with the utility.

Disclaimer: Any change in project scope requires this Checklist to be resubmitted and certified to reflect the most updated set of project details.

Signature: *Dani Mayberry* Date: _____

Name & Title (print): _____

Company: _____

Email: _____

Trelos Engineering

8605 Santa Monica Blvd #73703
West Hollywood, CA 90069
(760) 809-4714

December 6, 2023

RE: X2-Pole

Building Code:
Design Standard:

2021 IBC / ASCE 7-16

**AASHTO Standard Specifications for Structural
Supports for Highway Signs, Luminares, and Traffic
Signal**

WISDOT Standard Specifications

**Texas A&M Evaluation, TASH TL-3 Dated September
2022**

The X2 pole has the same chemistry, mechanical properties and geometry as the tested 2.5" Schedule 40 pipe and it will meet the test and evaluation MASH criteria.

If you have any questions please call our office at (760) 809-4714

Respectfully,

Michael Leeper, PE



Flock Safety Tech Specs

License plate reading cameras that capture more evidence for your city.



Dual Solar Panels

- Voltage: 18-20V
- Weight: 25.73 lbs (with hardware)
- Length: 21.25"
- Width: 28"
- Mount: Pole top or side of existing pole

Pole

- DOT breakaway pole - 12' installed height
- Diameter: 2.875" OD, 2.125" ID
- Material: 6061 Aluminum w/ black coating
- Alloy: 6061
- Weight: 32 lbs

Camera

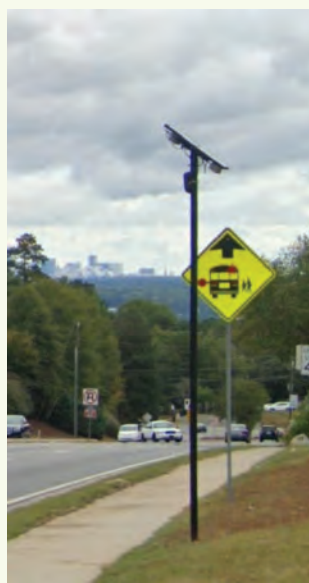
- Length: 10.5"
- Height: 4.5"
- Depth: 5.5"
- Mounting: Adjustable band clamps
- Weight: 3.6 lbs
- Footage: Uploads via LTE
- Capture Distance: 20-90ft from vehicle
- Deployment Distance: Up to 25' from edge of roadway
- Resolution: 2508x2048
- Vehicle Speed: up to 100 MPH
- Assembly: Flock Safety in Atlanta, GA



Install Anywhere



Solar &
Existing Pole



Solar &
Flock Pole



Electric &
Existing Pole

SE¼ of the SW¼ of **Section 31 Township 3 North, Range 22 East Extended Fourth Principal Meridian**
Wisconsin Area: 40.1 acres

Lat, Long: 42.6695117, -87.948528



source: randvmaiors.org



Texas A&M Transportation Institute
3135 TAMU
College Station, TX 77843-3135
979-317-2000
<http://tti.tamu.edu>

EVALUATION OF PROVELI BREAKAWAY POLE WITH FLOCK SAFETY ATTACHMENTS ACCORDING TO MASH TL-3

Prepared by

Nathan D. Schulz, Ph.D.
Associate Research Scientist
Texas A&M Transportation Institute
n-schulz@tti.tamu.edu

Texas A&M Transportation Institute
Texas A&M University System
College Station, Texas

November 2024

Objective

This document provides an assessment of the Proveli Breakaway Pole System with Flock Safety camera, battery, and solar panel attachments to determine its compliance according to the American Association of State Highway Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH) [1]. Specifically, MASH evaluation was conducted for variations in the Flock Safety attachment configurations.

Background

Full-scale crash testing was conducted on the Proveli Breakaway Pole System with Flock Safety camera, battery, and solar panel attachments [2]. The system was evaluated according to MASH TL-3 and was considered satisfactory for the appropriate MASH evaluation criteria. Figure 1 shows the test installation.



Figure 1. Proveli Breakaway Pole System with Flock Safety Attachments. [2]

The test installation in the full-scale crash testing consisted of a multi-part Proveli breakaway pole assembly. The base of the pole was embedded in a 12-inch diameter 30-inch deep unreinforced concrete foundation. Attached to the support pole were a Flock Safety camera, three battery packs, and a solar panel assembly. The weight of the solar panel assembly can vary based on the presence of batteries.

The camera was attached to the pole to face the impacting crash test vehicles which is representative of a standard field installation. This configuration with a 0-degree impact angle was determined to be more critical than a 90-degree impact angle as the camera has more opportunity to impact the vehicle windshield or roof. The face (i.e., cells) of the solar panel was

oriented to be perpendicular to the impacting crash test vehicles. This orientation was determined to be more critical than a parallel orientation for two primary reasons. First, the perpendicular edge of the solar panel has more stiffness due to the presence of horizontal cross braces. Second, the perpendicular orientation presents a longer impacting edge which allows for more potential interaction with the vehicle windshield and roof. In summary, the full-scale crash tests were conducted with the critical worst-case camera and solar panel mounting orientations. Thus, other orientations should be considered satisfactory based on the MASH full-scale crash testing.

Problem

This system has a range of battery pack configurations which may be utilized in field installations. Zero, one, two, and three battery packs are all possible configurations with the camera, solar panel, and breakaway pole. Thus, it was necessary to evaluate those configurations which were not evaluated through full-scale crash testing.

MASH TL-3 Assessment

Different battery pack configurations with the breakaway support system were analyzed to evaluate the compliance of the systems for MASH TL-3. An analysis was performed by reviewing the high-speed video for each of the three crash tests and considering the effect of different battery pack configurations on the outcome of the crash tests.

A MASH TL-3 assessment was performed for the Proveli Breakaway Pole with the Flock Safety camera, solar panel, and zero, one, two, and three battery packs.

MASH Test 3-60

During MASH Test 3-60, the Proveli breakaway pole released upon initial impact and fell to the ground in front of the vehicle. There was no secondary contact of the pole with the vehicle windshield or roof. Thus, the crashworthiness of the support structure would not be affected by the presence of zero, one, or two battery packs.

The Proveli Breakaway Pole system with the Flock Safety camera, solar panel, and zero, one, two, and three battery packs can be considered acceptable for MASH Test 3-60 evaluation criteria.

MASH Test 3-61

During MASH Test 3-61, the pole released during initial contact and rotated over the small car vehicle. There was no secondary contact with the vehicle windshield or roof after release. A part of the camera did have minor contact with the vehicle trunk. Also, the solar panel assembly had partial separation from the pole during initial contact. Thus, the solar panel assembly and battery packs would have minimal effect on the trajectory of the pole after initial contact. That being said, an assessment was made for the difference in the system center of gravity based on battery pack configurations. The original system evaluated in the full-scale crash testing with three battery packs had a system center of gravity of 110.5 inches above grade. A system with no battery packs would have a system center of gravity of 105 inches above grade. This results

in an approximate five percent difference in the system center of gravity for the range of battery packs. This is a minimal difference and the solar panel assembly showed partial separation in the full-scale crash test. The expected effect on the pole trajectory after initial contact with zero, one, or two battery packs should be considered negligible. Thus, the crashworthiness of the support structure would not be affected by the presence of zero, one, or two battery packs.

The Proveli Breakaway Pole system with the Flock Safety camera, solar panel, and zero, one, two, and three battery packs can be considered acceptable for MASH Test 3-61 evaluation criteria.

MASH Test 3-62

During MASH Test 3-62, the solar panel assembly released during initial contact between the vehicle and the pole [2]. Figure 2 shows the separation of the solar panel assembly from the rest of the pole assembly just after initial contact. Variations in battery pack configurations would not affect this release mechanism. Thus, the crashworthiness of the support structure would not be affected by the presence of zero, one, or two battery packs as the solar panel assembly did not stay attached during rotation and secondary contact with the vehicle windshield and roof.



Figure 2. Separation of Solar Panel Assembly after Initial Contact. [2]

The Proveli Breakaway Pole system with the Flock Safety camera, solar panel, and zero, one, two, and three battery packs can be considered acceptable for MASH Test 3-62 evaluation criteria.

Conclusions

A Proveli Breakaway Pole System with Flock Safety camera, battery, and solar panel attachments was evaluated with full-scale crash testing according to MASH TL-3. The system was found to be satisfactory for the appropriate evaluation criteria.

The full-scale crash testing was performed with three battery packs mounted to the solar panel assembly. It was necessary to evaluate the effect of the different battery pack configurations (i.e., zero, one, and two) on the crashworthiness of the system.

Configurations with zero, one, two, and three battery packs were found to be acceptable according to MASH TL-3 evaluation criteria. Therefore, the use of these battery pack configurations with the Proveli Breakaway Pole system and Flock Safety attachments should be considered satisfactory for MASH TL-3.

References

- [1] American Association of State Highway and Transportation Officials. "LRFD Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals." Washington, D.C., 2015.
- [2] Schulz, N. and Bastin, B. "MASH TL-3 Evaluation of Proveli Breakaway Pole System." Report No. 690900-PVL5-7. Texas A&M Transportation Institute, College Station, TX, 2024.